Evaluation of *System 44*

Final Report

Prepared for

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Contents

Exhibits

Evaluation Goals and Objectives

Over the past decade a significant amount of research on effective reading instructional practices for beginning and struggling readers has been conducted. The authors of a 1998 report published by the National Research Council concluded that phonics instruction that is systematic and explicit is an effective means of teaching children to read at the word level.[1] In 2000 the National Reading Panel conducted a meta-analysis of quantitative studies of phonics instruction and determined that systematic phonics instruction helped students learn to read better than all forms of control group instruction.[2] The panel concluded that systematic and explicit phonics instruction should be incorporated into literacy programs for beginning readers and into programs for preventing and remediating reading difficulties in struggling readers. Since 2000 numerous instructional programs that incorporate scientific reading research have been developed. In general, the effectiveness of these programs has been difficult to ascertain. Many have not undergone evaluations, and many of the evaluations that have been conducted employed research designs that lacked rigor.

Intervention Model

Scholastic's *System 44* is a recently developed foundational reading program intended for older struggling readers who have not mastered basic phonics and decoding skills. Combining researched-based phonics instruction with adaptive technology, *System 44* is designed to improve students' word reading accuracy, fluency, and comprehension. The *System 44* program delivers research-based instruction through an adaptive computer component; teacher-led small group instruction; and individual student practice involving high-interest, leveled materials. Thus students who have not responded to classroom reading instruction may benefit from the more intensive and specific decoding instruction provided through *System 44*.

Students in the *System 44* classroom are expected to receive approximately 20 to 25 minutes of computer-delivered instruction, complete 25 to 30 minutes of small group and individual work, and receive 5 to 10 minutes of whole class instruction each day. The program includes 25 series, each of which covers 5 to 8 topics, each of which comprises 4 strands: The Code (decoding instruction), Sight Words (high-frequency words), Word Strategies (syllable types and word parts), and Success (reading connected text). Beginning with Series 4, students complete a preliminary Fast Track Assessment to determine whether they have already mastered the skills covered in the series and can skip to the next series. Each software lesson in a series has a set of corresponding practice activities in (a) the *44Book*, (b) the *Decodable Digest,* and (c) the 36-title *System 44* paperback book and audiobook library. Supplementary instructional materials include practice worksheets from the online Scholastic Achievement Manager (SAM), letter tiles, posters, flip chart lessons, and the DVD *Sound and Articulation*. Students track their progress on these materials using the Self-Monitoring Chart. Approximately twice a week the teacher leads a 5- to 10-minute whole class instructional activity. The teacher can use SAM to generate reports to track individual student progress on each skill and identify students in need of small group instruction.

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[1]Snow, I.C.E., Burns, S., & Griffin, P. (Eds.). (1988). *Preventing reading difficulties in young children*. Washington, DC: National Research Council, Committee on the Prevention of Reading Difficulties in Young Children.
[2]National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Logic Model

Exhibit 1 portrays a logic model that summarizes the *System 44* program inputs, classroom practices, and expected outcomes for participating teachers and students.

Overview of the Evaluation

Using a randomized design, this evaluation assessed the effectiveness of *System 44* in terms of improving the foundational reading skills of struggling readers in Grades 4–8 in a large suburban school district that served approximately 22,000 students in 18 schools: 11 elementary schools, 4 middle schools, and 3 high schools. The evaluation of the implementation and impact of *System 44*, which involved 7 of the elementary schools and all 4 middle schools in the district, sought to answer 5 research questions:

1. What contextual factors are involved in the implementation of *System 44* (i.e., factors that promote or hinder successful implementation of the program)?

2. What are teachers' perceptions of the program?

3. What are the effects of *System 44* on student outcomes? Specifically, how do changes in word reading accuracy, fluency, and comprehension achieved by *System 44* students compare to changes achieved by a control group?

4. How does *System 44* differentially affect subgroups of students? Specifically, how do changes in word reading accuracy, fluency, and comprehension achieved by specific subgroups of *System 44* students (English language learners, students in special education, students receiving free or reduced-price meals, and ethnic minority students) compare to changes achieved by subgroups of control group students?

5. What is the association between *System 44* effects and program implementation? Specifically, are changes in *System 44* participants' word reading accuracy, fluency, and comprehension associated with variation in program implementation (including time on software, time in small groups, and resources available to teachers and students)?

Exhibit 1
Logic Model for *System 44*

Program Inputs/Activities	Classroom Practices and Teacher Activities	Teacher Outcomes	Short-Term Student Outcomes	Long-Term Student Outcomes
Professional development for teachers (beginning of year).	Daily use of Scholastic *System 44* software with fidelity.	Fidelity of *System 44* implementation:	Total *System 44* topics completed.	Improved reading fluency and comprehension.
In-school coaching by Scholastic (3 sessions per teacher).	Whole class instruction for 5 minutes at beginning of class.	▪ Classroom setup. ▪ Minutes of instruction.	Improved decoding accuracy, sight word accuracy, and comprehension scores.	Improved performance on state reading test.
District meetings for *System 44* teachers to share experiences.	Small group instruction.	▪ Use of program components. ▪ Student grouping.		
Curriculum materials: ▪ *System 44* software. ▪ *Decodable Digest*. ▪ *44Book*. ▪ *System 44* paperback book and audiobook library. ▪ Other (practice worksheets, letter tiles, posters, flip chart, *Sound and Articulation* DVD).	Differentiated instruction. Opportunities for students to practice skills independently.	Satisfaction with professional development and support. Perceived effectiveness of program.		

Scholastic implemented *System 44* in 11 elementary and middle schools in a large suburban school district in southern California during the 2010–2011 school year. The evaluation used a randomized trial design whereby RMC Research randomly assigned eligible students to a treatment (*System 44*) group or a control ("services as usual") group.

Sampling Plan

A 2-step process was used to establish student eligibility for *System 44*. The Scholastic Reading Inventory (SRI) was used to screen students in Grades 4–8 who performed below the 50th percentile on the spring 2010 California Standards Test (CST) for *System 44* eligibility. Those students who scored below 600 Lexiles[3] on the SRI were administered the Scholastic Phonics Inventory (SPI), a computer-based test used to identify students in need of additional phonics instruction. Students who scored in the Beginning or Developing reader categories on the SPI were randomly assigned (stratified by school and grade level) to either the *System 44* treatment group or the control group.

Participants

A total of 425 students met the eligibility criteria for *System 44* and were randomly assigned to the treatment group (*n* = 216) or the control group (*n* = 209). Exhibit 2 summarizes the characteristics of all treatment and control group students in the randomized sample and those students who were included in the analytic sample. The evaluation team conducted equivalence tests on key factors to determine whether differences between the treatment and control groups existed at baseline. Overall, the treatment and control groups in both the randomized and analytic samples were equivalent in terms of sex, eligibility for free or reduced-price meals, English language proficiency, special education status, ethnicity, and baseline CST scores.

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[3]For more information about the Lexile Framework for Reading see http://www.lexile.com/

Exhibit 2
Student Characteristics

Characteristic	Randomized Sample		Analytic Sample	
	Treatment ($n = 216$)	Control ($n = 209$)	Treatment ($n = 173$)	Control ($n = 171$)
Grade Level				
4	91 (42%)	86 (41%)	73 (42%)	72 (42%)
5	30 (14%)	31 (15%)	25 (14%)	27 (16%)
6	55 (26%)	53 (25%)	43 (25%)	39 (23%)
7	22 (10%)	24 (12%)	20 (12%)	21 (12%)
8	18 (8%)	15 (7%)	12 (7%)	12 (7%)
Sex				
Male	120 (60%)	116 (58%)	106 (61%)	95 (56%)
Female	80 (40%)	84 (42%)	67 (39%)	75 (44%)
Free or Reduced-Price Meals[a]				
None	109 (54%)	119 (60%)	97 (56%)	103 (61%)
Reduced price	67 (34%)	66 (33%)	58 (34%)	56 (33%)
Free	24 (12%)	15 (7%)	18 (10%)	11 (6%)
English Learner Status[a]				
English only	132 (66%)	143 (72%)	114 (66%)	124 (73%)
Initial full English speaker	22 (11%)	16 (8%)	21 (12%)	14 (8%)
English learner	32 (16%)	29 (14%)	25 (14%)	20 (12%)
Redesignated former English learner student	14 (7%)	12 (6%)	13 (8%)	12 (7%)
Special Education Status				
None	135 (62%)	136 (65%)	120 (69%)	121 (71%)
Specific learning disability	16 (7%)	17 (8%)	12 (7%)	13 (8%)
Speech or language impairment	22 (10%)	27 (13%)	17 (10%)	21 (12%)
Other classification	43 (20%)	29 (14%)	24 (14%)	16 (9%)
Primary Ethnicity[a, b]				
Caucasian	123 (62%)	129 (64%)	107 (62%)	109 (64%)
African American	19 (10%)	19 (10%)	15 (9%)	18 (11%)
Hispanic	33 (17%)	34 (17%)	29 (17%)	26 (15%)
Asian/Pacific Islander	12 (6%)	10 (5%)	10 (6%)	9 (5%)
Filipino	12 (6%)	7 (4%)	11 (6%)	7 (4%)
Other	0 (0%)	1 (0%)	0 (0%)	1 (1%)

[a]Data missing for 25 students in the randomized sample (16 treatment, 9 control) and 1 student in the analytic sample control group. [b]One treatment group student declined to respond.

Of the 425 randomly assigned students, 345 (172 treatment, 173 control) received the allocated intervention or control group condition as planned. Of the 44 treatment group students and 36 control group students who did not receive the allocated intervention or control group conditions as planned, 14 (8 treatment, 6 control) were ineligible for participation in the study due to exposure to *System 44* the previous year, a fact that was unknown at the time of random assignment. An additional 25 students (10 treatment, 15 control) were mistakenly assigned— that is, the schools already had assigned those students to Scholastic's *Read 180* program and had not intended them to be included in the eligibility pool. Other reasons students did not receive the allocated intervention or control group condition included parent withdrawal (1 treatment, 3 control), irreconcilable scheduling issues (4 treatment), skills deemed too high for the intervention after random assignment occurred (4 treatment), transfer to a non-*System 44* school (17 treatment, 7 control), and crossover (5 control students received the *System 44* intervention). Additionally, 1 control student who received the allocated intervention refused to participate in the study testing. A total of 344 of the 425 randomly assigned students (81%) were retained in the final analytic sample for all individual test outcomes. One school administered posttest SRI tests to a subset of treatment and control group students and administered posttest SPI tests to a subset of treatment students. The treatment and control group students who completed the SRI posttest were retained in the SRI outcome analyses, but the school's data were excluded from all SPI outcome analyses. Thus the final SRI analytic sample was 332 and the final SPI analytic sample was 293.

To assess whether selective study attrition occurred in the analytic sample, the evaluation team conducted equivalence tests on baseline demographic characteristics and CST reading scores. No differences were evident at baseline in terms of sex, eligibility for free or reduced-price meals, and ethnicity between students who were retained in the analytic sample and students who were not. However, the students retained in the analytic sample did have higher baseline CST scores than those students who were not retained. Students retained in the final analytic sample were also less likely than students who were not retained to have a special education classification other than learning disability or speech or language impairment and were more likely to be former English language learners and less likely to be current English language learners.

Data Collection

Data collection activities for the *System 44* evaluation included student reading tests, teacher surveys, *System 44* classroom observations, a professional development observation, and staff interviews. Survey, observation, and interview materials are included in Appendix A.

Student Reading Tests

RMC Research hired and trained 4 local testers to administer a battery of standardized reading tests to all treatment and control students . The testers administered the tests to each student separately over a 3-week period in September and October 2010 to establish baseline scores and again in May 2011 to attain follow-up scores. Listed in order of administration, the tests included the following:

- **Test of Silent Reading Efficiency and Comprehension (TOSREC)**—A 60-item comprehension test that assesses a student's ability to silently read a sentence and identify whether the sentence is true or false. The test is grade level specific. Form A was administered in fall 2010, and Form C was administered in spring 2011.

- **Comprehensive Test of Phonological Processing (CTOPP) Elision subtest**—A 34-item test that assesses the extent to which a student can say a word and then say what is left of the word after being instructed to drop out designated sounds.
- **Woodcock-Johnson III Word Identification subtest**—An untimed test that assesses a student's ability to accurately read aloud printed words.
- **Woodcock-Johnson III Word Attack subtest**—An untimed test that assesses a student's ability to apply phonic and structural analysis skills by measuring the number of non-words that a student can accurately pronounce aloud.
- **Test of Word Reading Efficiency (TOWRE) Sight Word Efficiency subtest**—A 108-item test that measures the number of printed words that a student can accurately read aloud in 45 seconds. Form A and Form B were administered back-to-back in fall 2010 and spring 2011.
- **Test of Word Reading Efficiency (TOWRE) Phonetic Decoding Efficiency subtest**— A 66-item test that assesses a student's ability to apply grapho-phonemic knowledge by reading pronounceable non-words. The test measures the number of non-words that a student can accurately read aloud in 45 seconds. Form A and Form B were administered back-to-back in fall 2010 and spring 2011.

The battery of standardized reading tests required approximately 35 to 45 minutes to administer to each student, which included time to build rapport. The test administrators reported that although the testing went smoothly overall, a few students were difficult to test due to language barriers or other reasons such as visual impairment or refusal to participate. Other tests administered to the participating students included the English-Language Arts subtest of the CST; the SRI, a test of reading comprehension skills; and the SPI, a test of accuracy and fluency in letter recognition, sight word recognition, and non-word decoding.

Teacher Survey

A survey administered to *System 44* teachers in fall 2010 and spring 2011 gathered information about the teachers' background, the types of instructional strategies and activities they employed to teach foundational reading skills, their opinions about the effectiveness of *System 44*, their opinions about *System 44* professional development, and their knowledge of the *System 44* program. For comparative purposes, a sample of control group teachers completed a modified version of the survey in spring 2011.

Classroom Observations

RMC Research staff observed every *System 44* classroom 3 times during the 2010–2011 school year (November, February, and April) to gather data on *System 44* implementation. The classroom visit protocol captured the essential features of *System 44* and other features of effective instruction such as maintaining a positive learning environment, monitoring students, and providing differentiated support based on student needs.

Professional Development Observations

RMC Research staff also observed the professional development provided to *System 44* teachers at the beginning of the school year to better understand the expected implementation of the program and any training issues that might have interfered with the fidelity of program implementation.

Staff Interviews

The end-of-year interviews with teachers, principals, and district staff assessed the contextual environment in which *System 44* was implemented, the factors that facilitated or hindered implementation, the fidelity of *System 44* implementation, and staff perceptions of *System 44* materials and instructional activities.

Analysis Plan

RMC Research utilized a mixed-method approach to evaluate the impact of *System 44*. Program implementation was evaluated through quantitative analyses of classroom observations and teacher surveys; these analyses were supported by qualitative information gathered through interviews with district staff, school principals, and *System 44* teachers. To measure the impact of *System 44* on student test scores, RMC Research used a series of quantitative analyses.

Implementation Analysis

Classroom implementation fidelity was defined as the average of the fidelity ratings that were part of the classroom observations conducted by the evaluation team in fall 2010, winter 2011, and spring 2011.

Implementation fidelity included the following components:

- Classroom setup.
- Minutes of instruction on software and in small groups.
- Inclusion of all program components.
- Instructional management and delivery.

Teacher survey data were used to examine:

- Teacher background characteristics.
- Teacher perceptions of *System 44* professional development.
- Reading instructional practices prior to *System 44* compared to reading instructional practices using *System 44.*
- Reading instructional practices of *System 44* teachers compared to reading instructional practices of control group teachers.
- Perceptions of the effectiveness of reading instructional practices prior to and using *System 44.*
- Frequency of use of *System 44* components.
- Understanding of *System 44* program concepts and components.

Teacher interview data from spring 2011 provided detailed information concerning the teachers' perceptions of the strengths and challenges of using *System 44,* how they made decisions concerning student grouping, and how they used various SAM reports. Principal interview data from spring 2011 provided information about the strengths and challenges of implementing *System 44* and other contextual issues. District staff interview data from spring 2011 provided additional information about the professional development, the factors that hindered or facilitated implementation of *System 44*, perceptions of program effectiveness, and recommendations for future implementation.

Impact Analysis

This evaluation used an intent-to-treat statistical model—a framework in which participants are analyzed within their initial random assignment group regardless of whether they actually received treatment. Because students were clustered within schools, a multilevel model was used to estimate the impact of the intervention on spring 2011 outcome scores while controlling for baseline score, ethnicity, English language proficiency, and school level. The model was run separately for each outcome measure. The school district provided individual student demographic data for grade level, sex, free or reduced-price meal eligibility, ethnicity, special education status, and English language proficiency. The following demographic covariates were included in the model: ethnicity (Caucasian), special education status, and sex. In addition, school level was added as a covariate. No data were missing for any of the demographic covariates. To assess the impact of *System 44* on student outcomes, the evaluation team used hierarchical linear modeling, controlling for baseline scores and student demographic characteristics at Level 1 and school at Level 2. The 2-level model for estimating the impact of *System 44* on change in outcomes is specified below.

Level 1 Model:

$$Y_{ij} = \beta_{0j} + \beta_{1j}(Trt_{ij}) + \beta_{2j}(Pretest_{ij}) + \beta_{3j}(SPED_{ij}) + \beta_{4j}(Caucasian_{ij}) + \beta_{5j}(Sex_{ij}) + \beta_{6j}(Level_{ij}) + \varepsilon_{ij}$$

Level 2 Model:

$$\beta_{0j} = \gamma_{00} + \mu_{0j}$$
$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$
$$\beta_{3j} = \gamma_{30}$$
$$\beta_{4j} = \gamma_{40}$$
$$\beta_{5j} = \gamma_{50}$$
$$\beta_{6j} = \gamma_{60}$$

where:

ε_{ij} = the random error term for student i in school j

μ_{0j} = the random intercept term for school j

and:

Y_{ij} = the posttest score for student i in school j

Trt_{ij} = the treatment indicator for student i in school j
(0 = control, 1 = treatment)

$Pretest_{ij}$ = the posttest score for student i in school j

$SPED_{ij}$ = the special education indicator for student i in school j
(0 = no special education classification, 1 = special education classification)

$Caucasian_{ij}$ = the ethnicity indicator for student i in school j
(0 = non-Caucasian, 1 = Caucasian)

Sex_{ij} = the sex indicator for student i in school j
(0 = male, 1 = female)

$Level_{ij}$ = the school level indicator for student i in school j
(0 = middle, 1 = elementary)

Program Implementation Findings

To provide context for interpreting the impact of the *System 44* intervention, the evaluation team assessed its implementation from several perspectives. Scholastic staff expected implementation to improve as teachers gained experience using *System 44*. Although many factors contributed to the fidelity of implementation, barriers to implementation also emerged. This section summarizes the findings for the 2 evaluation questions pertaining to program implementation.

Contextual Factors in *System 44* Implementation

Data regarding contextual factors involved in the implementation of *System 44* were obtained from the teacher surveys; the interviews with teachers, principals, and district staff; and the observations of *System 44* classrooms. These data include descriptions of the *System 44* classrooms and the counterfactual, teacher background characteristics, the professional development activities, and the fidelity of *System 44* implementation.

System 44 Classrooms

Scholastic staff expected teachers using the *System 44* model in a 60-minute class period to allocate their time such that students spent approximately 20 minutes on the *System 44* software; approximately 20 minutes reading *System 44* library books, completing book logs, and taking Scholastic Reading Counts quizzes; and approximately 20 minutes in whole class or small group instruction involving SMART lessons, the *44Book*, or the *Decodable Digest* or conferencing individually with the teacher. One middle school (2 classrooms) had a shorter 48-minute period that allocated 20 minutes for *System 44* software and the remaining 28 minutes for *System 44* library books and small or large group instruction.

The Counterfactual

The counterfactual varied across schools because students in the control group did not receive a uniform alternative to the *System 44* intervention. The difference was greatest between the elementary schools, which used a pull-out model, and the middle schools, which used a replacement model. Because *System 44* was a pull-out class at the elementary school level, the control group students who remained in the regular classroom engaged in a variety of activities across content areas. In contrast, in the middle schools *System 44* was delivered during the language arts instruction block and a key difference between the treatment and control groups was lower student-teacher ratios in the *System 44* classes. Although some *System 44* teachers also taught control group students, they did not use *System 44* materials with the control group.

Appendix B summarizes the reading interventions provided in the control group classrooms during the 2010–2011 school year. The elementary school reading interventions included Voyager-Passport, Ticket to Read, Read Naturally, SRA Decoding, and Houghton-Mifflin. The middle school reading interventions included Voyager-Journeys, Houghton-Mifflin, Rosetta Stone, Explode the Code, and various worksheets.

Teacher Background Characteristics

The teacher survey administered to both the treatment group and the control group solicited information about the respondents' teaching experience, education, certifications, and prior experience with Scholastic's *System 44* and *Read 180* programs. All but one of the *System 44* teachers (92%) were female, and 73% of the control group teachers were female. Exhibit 3 shows that the control group teachers had more teaching experience than the *System 44* teachers and were more likely to have a degree beyond a Bachelor's degree. The *System 44* teachers were, however, more likely to have Education Specialist or Reading Specialist certification and to have prior experience teaching *System 44* or *Read 180.*

Exhibit 3
Teacher Education and Experience

Characteristic	Treatment			Control		
	M	*SD*	Percent	*M*	*SD*	Percent
Teaching Experience						
Total years of teaching experience	12.2	6.3		14.3	8.6	
Years teaching in this district	7.8	5.1		10.6	6.1	
Years teaching at current school	5.8	3.0		8.3	6.2	
Education (Highest Degree)						
Bachelor's degree			33%			24%
Master's degree			42%			61%
Specialist or doctorate			25%			15%
Certifications						
Professional Clear			67%			55%
Education Specialist			33%			18%
Reading Specialist			8%			3%
Administrative Services			17%			6%
CLAD or BCLAD[a]			75%			64%
Prior Scholastic Experience						
System 44			50%			12%
Read 180			83%			18%

Note. n = 12 *System 44* teachers; *n* = 33 control group teachers
[a]CLAD = Crosscultural, Language, and Academic Development. BCLAD = Bilingual, Crosscultural, Language, and Academic Development.

Professional Development

Professional development for the *System 44* teachers included a 1-day training in August 2010, 3 coaching visits from Scholastic staff during the 2010–2011 school year, and periodic district meetings that served as a *System 44* professional learning community for participating teachers. Analyses of the professional development are based on the training observation

results, information obtained from the Scholastic trainer at the conclusion of the training, and the teacher survey results.

In August 2010 Scholastic staff and school district staff provided a 1-day training for 24 teachers who were likely to use the *System 44* program. Most of the teachers reported basic familiarity with *System 44*, and the trainer provided only a brief overview of the program. The overview sufficiently addressed the intervention components and the student learning goals and objectives and lightly covered the theoretical and empirical support for the intervention content. The trainer addressed questions about specific implementation requirements for the evaluation (e.g., the *System 44* class period needed to be 60 minutes long and students needed at least 20 minutes on the computer daily). The trainer introduced the teachers to the breadth of the instructional materials but did not have sufficient time to cover the materials in depth. Most of the teachers wanted to focus on the software and most seemed to gain a good understanding of how students would progress through the program. The trainer addressed strategies for integrating the intervention into the classroom, utilizing the embedded tests and highlighting key instructional skills, but the teachers spent little time practicing the skills. Overall, the trainer provided a quality, interactive training that was tailored to the teachers' needs, covered the breadth of the program materials, and addressed the teachers' questions and concerns. A longer training would have allowed the trainer to cover the materials in greater depth and offer more time for teachers to practice key instructional strategies.

At the conclusion of the training the teachers responded to several survey questions. Half reportedly had not received any previous training on *System 44,* 25% had attended similar training in a previous school year, and 25% had received other support for teaching *System 44* from a Scholastic representative in a prior year. *System 44* teachers again responded to survey questions about professional development activities in spring 2011. Exhibit 4 summarizes the *System 44* teachers' responses at both time points. Overall, the teachers gave the professional development high ratings—although the mean ratings were somewhat lower in spring 2011 than in fall 2010. Several teachers noted that the training on SAM reports was particularly helpful.

Exhibit 4
Ratings of *System 44* Professional Development

Professional Development Characteristic	Fall 2010		Spring 2011	
	M	*SD*	*M*	*SD*
The teacher training prepared me to use the program in my classroom.	4.75	0.45	4.17	1.19
The individual support from Scholastic during the year enhanced my skills in using *System 44* in my classroom.	—	—	4.09	1.14
The individual support from district staff during the year enhanced my skills in using *System 44* in my classroom.	—	—	3.91	1.22
I am pleased with the *amount* of *System 44* professional develop I received.	4.42	0.67	3.91	1.22
I am pleased with *quality* of *System 44* professional development I received.	4.75	0.45	4.18	1.17

Note. A dash indicates that the question was not asked at that time point. Ratings based on a 5-point scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Number of respondents = 12.

Fidelity of Implementation: Classroom Observations

The evaluation team assessed the fidelity of *System 44* implementation in 2 ways: classroom observations and teacher self-report in surveys and interviews. This section summarizes the fall, winter, and spring classroom observations in terms of classroom setup, minutes of instruction, inclusion of program components, instructional management, and instructional delivery.

Classroom Setup. Classroom setup was rated on 3 criteria: computers for at least one third of the class are accessible and functioning, auxiliary equipment (headsets, microphones, CD players) are accessible and functioning, and *System 44* materials are easily accessible to students and teachers. The mean rating across these items was converted to a 4-point scale. In fall 2010, 58% of the 12 classrooms observed received the highest rating; this percentage increased to 75% in the winter and 100% of the classrooms in spring 2011.

Minutes of Instruction. Minutes of *System 44* instruction were consistent across all 3 observations. Although 9 of the 12 classrooms provided at least 55 minutes of instruction daily, 3 middle school classrooms provided between 45 and 49 minutes of instruction daily because the class period length did not allow for the allocation of 60 minutes for *System 44* instruction.

Inclusion of Program Components. During small group instruction and individual work time students were expected to use 3 primary program components on most days: the *44Book,* the *Decodable Digest,* and the *System 44* paperback book and audiobook library. In addition, on some days students used letter tiles and SAM practice worksheets or teachers used the *System 44* flip chart to instruct small groups. Exhibit 5 summarizes the materials used during the observed teacher-led small group instruction, and Exhibit 6 summarizes the materials used during the observed independent work time. In most cases half of the class used the computer software while the other half received small group instruction or worked independently, and midway through the class period the groups changed places.

During teacher-led small group activities, observers most frequently noted the use of the *System 44* flip chart, letter tiles, and the *Decodable Digest.* While students worked independently, observers most frequently noted the use of the *44Book, System 44* paperback books, and the *Decodable Digest.* The mean number of students using each type of material declined over time due to decreasing class size as students completed the program. Level of student engagement appeared to peak at the winter observation point.

Exhibit 5
Use of Instructional Materials During Teacher-Led Small Group Activities

Instructional Item	Total Number of Times Observed			Mean Level of Use		
	Fall	Winter	Spring	Fall	Winter	Spring
Decodable Digest	7	1	1	1.50	1.00	2.00
44Book	4	0	0	1.50	—	—
Teaching resources for *System 44* library	0	0	0	—	—	—
Letter tiles	5	4	2	2.00	2.00	1.50
System 44 flip chart	7	6	6	1.75	1.88	1.88
Sound and Articulation DVD	0	0	0	—	—	—
SAM resources/worksheets	2	2	2	1.00	2.00	2.00
System 44 library books	4	0	0	1.25	—	—
SAM reports	0	0	3	—	—	1.25

Note. Classrooms observed: 12. Total number of times observed is out of 25 rotations in fall, 22 in winter, and 23 in spring. Rating scale for level of use: 0 = *none*; 1 = *partially;* 2 = *fully.* Dashes indicate that the item was not observed.

Exhibit 6
Use of Instructional Materials in Independent Work

Type of Material	Total Number of Times Observed			Mean Number of Students Using			Mean Level of Student Engagement		
	F	W	S	F	W	S	F	W	S
System 44 paperback books	13	17	13	6.8	3.9	4.7	1.6	1.8	1.7
System 44 audiobooks	7	11	7	2.2	2.2	1.4	1.5	1.9	2.0
44Book	13	17	16	7.0	4.6	3.3	1.4	1.8	1.6
Decodable Digest	9	15	15	5.0	4.4	4.0	1.2	1.7	1.7
SAM resources/ worksheets	7	13	5	7.0	6.5	2.7	1.6	1.8	1.7

Note. Classrooms observed: 12. Total number of times observed is out of 25 rotations in fall, 22 in winter, and 23 in spring. F = fall, W = winter, S = spring. Rating scale for level of student engagement: 0 = *Not at all engaged/none engaged*; 1 = *partially engaged/some engaged*; 2 = *fully engaged/all engaged*.

Instructional Management and Delivery. Each *System 44* class observed was rated on 6 aspects of instructional management pertaining to the teacher's ability to maintain a positive learning environment, monitor students, keep students on task, provide smooth transitions between rotations, use flexible student groups, and differentiate support based on student needs. Each class was also rated on 5 aspects of instructional delivery pertaining to pacing,

appropriateness of the delivery for the student skill level, teacher preparation, active engagement of the students, and overall lesson execution. Exhibit 7 summarizes the mean ratings for instructional management and delivery across the 3 observation time points. Overall, the observers rated instructional management and instructional delivery lowest in fall 2010 and highest in winter 2011.

Exhibit 7 also provides mean ratings of the 11 items that compose the 2 scales. The aspects of instructional delivery that received the lowest ratings were "appear well prepared for the lesson" and "execute the lesson well." The aspects of instructional management that received the lowest ratings were "use flexible groupings for students based on instructional needs" and "differentiate support based on students' needs." The ratings on these instructional management aspects were lowest in fall 2010 (Ms = 0.8 and 1.6, respectively) and higher in winter 2011 (Ms = 1.6 and 2.4, respectively).

Exhibit 7
Ratings of Instructional Management and Delivery

	Fall		Winter		Spring	
Scale	*M*	*SD*	*M*	*SD*	*M*	*SD*
Instructional Management	2.8	1.10	3.6	0.67	3.5	0.69
Instructional Delivery	3.0	1.30	3.3	0.89	3.0	1.50
Instructional Management						
Maintain positive learning environment	2.7	0.65	2.8	0.39	2.7	0.47
Monitor students	2.6	0.79	2.7	0.49	2.6	0.50
Keep students on task	2.6	0.79	2.7	0.49	2.6	0.50
Ensure smooth transitions between rotations	2.2	0.75	2.6	0.67	2.6	0.50
Use flexible groups for students based on instructional needs	0.8	1.20	1.6	1.30	1.7	1.30
Differentiate support based on students' needs	1.6	1.30	2.4	0.90	2.4	0.93
Instructional Delivery						
Maintain an appropriate pace	2.6	0.52	2.6	0.52	2.9	0.33
Deliver lessons appropriate for skill levels of students	2.7	0.48	2.8	0.39	2.9	0.33
Appear well prepared for lesson	2.1	1.20	2.4	0.90	1.8	1.40
Actively tries to engage students	2.0	1.30	2.5	0.90	2.0	1.50
Executed the lesson well	2.0	1.20	2.2	0.87	1.9	1.40

Note. Rating scale: 0 = *not at all*; 1 = *to a small extent*; 2 = *to a moderate extent*; 3 = *definitely.* Number of classroom observations = 35.

Fidelity of Implementation: Teacher Self-Report

The spring 2011 teacher survey respondents reported that students used the *System 44* software between 20 and 30 minutes daily (average across classrooms: 25.3 minutes). The number of computers available in each classroom ranged from 5 to 20 (average 8.8). Exhibit 8 shows the reported frequency of use for a range of *System 44* components. SAM reports,

individual student support, and Reading Counts quizzes were used most frequently. Teachers used the bound version of the *Teaching Guide* more frequently than they used the computer version that was part of Scholastic's Interactive Teaching System software. At the conclusion of the *System 44* training in August 2010 and at the end of the 2010–2011 school year, the participating teachers were asked to respond to 10 questions designed to test their understanding of the *System 44* program components. On average, the teachers answered 80% of the items correctly in fall 2010 and 81% of the items correctly in spring 2011.

Exhibit 8
Reported Use of *System 44* Components

System 44 Component	Mean Frequency Rating	*SD*
Whole class instruction in *System 44*	3.58	1.20
Teaching Guide (bound copy)	3.83	0.72
Teaching Guide (computer version)	2.83	1.30
44Book or *Decodable Digest* (computer version)	3.08	1.40
SAM reports	4.25	0.75
Small group instruction: SMART lessons	3.67	0.78
Individual student support (outside of small group)	4.17	1.00
SAM worksheets	2.17	0.72
SAM book expert (to identify appropriate books)	2.08	1.00
Flip chart	3.08	1.00
Letter tiles	2.67	0.89
System 44 audiobooks	3.75	1.20
Reading Counts quizzes	4.08	0.90
Sound and Articulation DVD	1.50	0.52
Conference guides (for *System 44* library books)	2.75	1.40
Scholastic Red routines	3.58	0.90
Materials not part of *System 44*	2.42	1.20

Note. Frequency ratings 1 = *rarely or never*; 3 = *once a week*; 5 = *every day.* Number of respondents = 12.

The teachers also rated their understanding of 5 key *System 44* program components in the fall and spring (see Exhibit 9). Overall, the teachers reported a greater understanding of how to implement the program in spring 2011 than they had in fall 2010, but the differences were not statistically significant. In addition, the teachers' responses varied less in the spring than in the fall, a finding that suggests most teachers believed they had a high level of understanding of how to use the *System 44* program components.

Instructional Grouping. Interviews with *System 44* teachers conducted in spring 2011 indicated that about half used either the SAM Differentiated Instruction Report or another SAM report to group students for small group instruction. By the end of the school year, however,

many students had completed *System 44* and some class sizes were very small. In those cases students used the computer software as a group and then received individual instruction from the teacher or worked independently. In one classroom students used the Self-Monitoring Checklist to determine whether they needed to use the computer before working independently. One teacher reported grouping students based on their ability, and 2 others assigned those students who arrived earliest to use the computers during the first half of the class.

Exhibit 9
Understanding of Key *System 44* Program Components

	Fall		Spring	
Item	*M*	*SD*	*M*	*SD*
I understand . . .				
How the *System 44* software works to individualize instruction and practice for students.	4.25	1.30	4.50	0.67
What to do during small group instruction.	4.25	0.75	4.33	0.65
How to use SAM to group students for small group instruction.	4.42	0.90	4.67	0.49
When to use the *Decodable Digest*, the *44Book*, and *System 44* library books for student practice.	4.42	0.79	4.83	0.39
How to monitor student progress in *System 44*.	4.25	1.20	4.83	0.39

Note. Rating scale: 1 = *strongly disagree*; 5 = *strongly agree*. Number of respondents = 12.

Whole Group Instruction. The teachers varied widely in terms of how frequently they instructed students as a whole group. Two of the 12 teachers (17%) reported no whole group instruction; 8% used whole group instruction less than once a week; 25% did so once a week, 17% did so 2 or 3 times a week, and 33% did so every day. The reasons cited for using whole group instruction infrequently were large class size and a preference for small group instruction.

SAM Reports. In spring 2011 the interviewer showed each teacher 6 SAM reports and asked how often he or she used each report. The teachers most often used the Differentiated Instruction Report to identify topics for small group instruction (three fourths reported using it at least once a week). The teachers also used the Software Performance Report and the Reading Progress report ranging from weekly to every other month. Least frequently used were the Response to Intervention Report and the Student Mastery Report. Several teachers commented that these reports duplicated information that could be found on other reports.

Teacher Perceptions of the *System 44* Program

The fall 2010 teacher survey asked respondents to rate the effectiveness of the reading intervention they had used the previous year (2009–2010) and their expectations regarding the effectiveness of *System 44*. The spring 2011 survey asked respondents to rate their perceptions of the effectiveness of *System 44*. Exhibit 10 provides the mean ratings for the 3 time points. In general, the teachers expected *System 44* to be more effective than their prior year's program in 5 basic reading skill areas, and these expectations were borne out by their ratings of *System 44* in spring 2011. The difference between the perceived effectiveness of the prior program and *System 44* with respect to teaching phonemic awareness was statistically significant ($p < .05$).

The teachers also responded to questions regarding the reading instructional practices they used with struggling readers both prior to and with *System 44*. The teachers indicated whether each practice listed was central to their reading instruction, a small part of their reading instruction, or not part of their reading instruction. The control group teachers responded to the same questions regarding the 2010–2011 school year. Exhibit 11 lists the practices for which the percentage of teachers reporting that the practice was "central to my instruction" changed by at least 25%. Appendix C presents the results for all of the reading instructional practices.

Exhibit 10
Perceived Effectiveness of Reading Instruction

Reading Skill Area	Perceived Effectiveness of Prior Program (2009–2010)		Expected Effectiveness of *System 44* (Fall 2010)		Perceived Effectiveness of *System 44* (Spring 2011)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Phonemic awareness	3.50*	1.10	4.08	1.50	4.50*	0.67
Phonics	3.73	1.20	4.58	1.20	4.55	0.69
Fluency	3.91	1.00	4.42	1.20	4.45	0.69
Vocabulary	4.18	0.60	4.25	1.20	4.18	0.75
Comprehension	4.09	1.00	4.08	1.20	4.00	1.00

Note. Rating scale: 1 = *Strongly disagree*; 5 = *Strongly agree*. *p < .05. Number of respondents = 12.

Exhibit 11
Practices Central to Instruction

Instructional Practice	*System 44* Teachers: Prior Year	*System 44* Teachers: 2010–2011	Control Teachers: 2010–2011
Provide time in reading block for students to practice skills on their own.	92%	67%	
Provide materials for at-home practice of skills introduced in class.	50%	25%	53%
Teach whole class reading lessons.	58%	33%	69%
Work one-to-one with students on reading.	42%	75%	42%
Use supplementary reading materials.	58%	27%	
Use books that are easy to decode.	75%	42%	
Use separate intervention materials for some students.	67%	42%	
Use reading software/technology.		92%	49%
Use tests to determine progress on skills.	92%	58%	
Use diagnostic tests to identify students who need reading intervention services.		92%	67%
Students use graphic organizers to track information.	83%	58%	

Note. System 44 teachers *n* = 12. Control group teachers *n* = 33.

Of the 11 instructional practices whose importance differed, 9 reflected change in the *System 44* teachers' instruction between 2009–2010 and 2010–2011 and 5 reflected differences between the *System 44* teachers and the control group teachers in 2010–2011. The *System 44* teachers were less likely than the control group teachers to "teach whole class reading lessons" or "provide materials for at-home practice," but more likely than the control group teachers to "work one-to-one with students," "use reading software," and "use diagnostic tests to identify students who need reading intervention services." Compared to 2009–2010, in 2010–2011 the *System 44* teachers were more likely to "work one-to-one with students" and less likely to "provide materials for at-home practice," "teach whole class reading lessons," "use books that are easy to decode," "use tests to determine progress on skills," and have "students use graphic organizers."

In spring 2011 the *System 44* teachers were asked to discuss the aspects of the program that they liked best. The teachers mentioned several software-related features: being able to fast track students through skills they had already mastered, the software's ability to individualize instruction according to students' needs and to revisit skills that students had not yet mastered, and the sense of accomplishment and empowerment students gained as they progressed through the software. The teachers also liked the SAM reports they could use to track student progress and group students for teacher-led instruction on specific skills, the *System 44* library books, the *Decodable Digest*, and other program materials.

Factors That Facilitated Implementation

The *System 44* teachers, principals, and district staff who were interviewed for the evaluation identified several factors that facilitated program implementation including district support, professional development, software licenses and technology support, teacher dedication, and the *System 44* materials.

District Support. Throughout the school year district staff maintained personal communication with the participating teachers, principals, and counselors and attended meetings to discuss concerns and address challenges. Principals cited support from district staff as a key factor facilitating the implementation of *System 44.*

Professional Development. Scholastic staff conducted a training in fall 2010, and Scholastic staff and district staff provided training and support throughout the school year. Scholastic staff provided 3 days of on-site coaching to each teacher, and district staff facilitated meetings for all teachers who implemented Scholastic programs.

Software Licenses and Technology Support. Scholastic and the district maintained a sufficient number of working computers to accommodate the students in the program. Scholastic provided a sufficient number of software licenses and the district's technology staff provided efficient support to schools to keep the computers and software functioning.

Teacher Dedication. The teachers selected to implement the *System 44* program were enthusiastic about the intervention and willing to take on a challenge. Some classrooms had teacher aides who provided valuable support—in particular to students who lacked independent work skills. Several principals mentioned teacher interest in the *System 44* program as one of the keys to its success.

System 44 **Materials**. The SAM reports enabled the teachers to track student progress and identify needs. In addition, the software was able to perform certain tasks that the teachers

could not execute with precision with a large number of students. In particular, the software identified the specific skills each student needed to improve, implemented the *System 44* program with the utmost fidelity, and provided instruction to every student at his or her skill level. Partway through the school year the teachers received Scholastic's Interactive Teaching System, which allowed them to access the print materials associated with *System 44* (e.g., *Decodable Digest*, *44Book*, *Teaching Guide*) on their laptop computers and project them on a screen during teacher-led instruction. Many teachers were very excited about this option for delivering content.

Barriers to Implementation

The teachers, principals, and district staff also identified several barriers to implementation. Two of the greatest challenges occurred at the beginning of the school year and were later resolved: scheduling conflicts (particularly at the middle school level) and technology problems. Other challenges included classroom teachers' reluctance to release students for pull-out interventions, implementation variation, perceived shortcomings of the *System 44* materials, the disruption caused by transitioning between activities, the passive consent required for the evaluation, and the inconveniences related to participating in the evaluation.

Scheduling Conflicts. Challenging scheduling conflicts emerged at the beginning of the school year. The middle schools in particular experienced difficulty placing the control group students in a reading intervention program (some schools placed the control group students in *Read 180* and subsequently had to remove them to comply with the evaluation requirements; others asked the district to provide another reading intervention program). Schools that began implementing *System 44* after the school year had already begun had to shuffle individual students' schedules, and in some schools so few students were assigned to the treatment group that the *System 44* class could not be included on the master schedule (i.e., it affected the overall staffing ratio) and a resource teacher was assigned to teach the class.

Technology Problems. Teachers faced many technology problems at the beginning of the school year, which hindered the initial implementation. For example, older computers would freeze and shut down, some of the SAM schoolwide reports caused the computers to shut down, the air conditioner noise interfered microphone operation at one school, and microphone and headphone problems were prevalent (mostly due to wear and tear).

Teacher Reluctance to Release Students for Pull-Out Interventions. Some general education teachers were reluctant to release their students for the *System 44* class. Students often arrived late, which interfered with group instruction and made it difficult for the teachers to ensure that the students spent the prescribed time using the computer software. Additionally, principals expressed concern about pulling students out of content classes such as science and social studies, and some parents objected to their children being pulled out of favorite classes.

Implementation Variation. Most teachers implemented the *System 44* program as planned, but variations were reported: the teachers at one middle school were constrained by a 48-minute class period, for part of the year one teacher utilized 3 rotations during a class period rather than 2, some classes served students with such a wide range of skills that grouping students was difficult, and some teachers supplemented the program materials with worksheets of their own design.

Shortcomings of the *System 44* Materials. Some teachers believed that *System 44* could be improved by providing more supplemental materials for skills practice (particularly for learning

disabled students) and more content of interest to middle school students. A few teachers mentioned they would have liked more opportunities for students to practice reading fluency, and several teachers who desired more support for the *System 44* library books added a book log worksheet for students to complete for each book they read. In addition, some teachers reported that they were not sufficiently familiar with the software to assist students when they asked for help.

Disruption Caused by Transitioning Between Activities. A few teachers noted that the transitions between computer work, small group work, and individual work were disruptive. The requirement that students spend approximately 20 minutes using the software each day exacerbated the problem—some teachers wanted students to be able to move from one activity to the next at natural breaking points such as after completing a lesson on the computer, a library book, or a worksheet.

Passive Consent Required for the Evaluation. Some teachers questioned the district's decision to require passive parental consent for student participation in the evaluation. District staff believed that active consent was not necessary because students were not participating in any activities that were experimental or significantly different from normal instructional activities.

Inconveniences Related to Participating in the Evaluation. Some principals expressed concern that the teachers did not have any input regarding student selection for *System 44* and that the reading interventions provided to the control group students were not as desirable as *System 44*. Although some principals received no questions or complaints from parents, others reported dealing both with disappointed parents who wanted their children in the program and parents who did not want their children in the program.

Effects of *System 44* on Student Outcomes

RMC Research used multilevel models to estimate the impact of *System 44* on spring 2011 student outcome scores while controlling for fall 2010 scores, minority status (Caucasian/non-Caucasian), and special education status (special education/not special education). The same analytic model was run for each of 6 individually administered standardized tests: TOSREC, CTOPP Elision, Woodcock-Johnson III Word Identification, Woodcock-Johnson III Word Attack, TOWRE Sight Word Efficiency, and TOWRE Phonetic Decoding Efficiency. Subsequent analyses examined program impacts on CST English-Language Arts scaled scores and on SRI and SPI scores. Appendix D presents the fixed and random effects and intraclass correlations for each model in Exhibits D1 through D14.

Individual Test Outcomes

The data analysis revealed no significant intervention effects for the overall sample: the treatment group students performed similarly to the control group students on each of the 6 individual tests. Exhibit 12 presents the impact estimates for the overall sample.

Exhibit 12
Individual Test Impact Estimates

Test	Estimated Impact				
	n	Impact (β)	*SE*	Effect Size	*p*
TOSREC	340	-1.88	1.19	-0.11	.115
CTOPP Elision	344	0.54	0.49	0.09	.276
Woodcock-Johnson III Word Identification	338	0.65	0.84	0.04	.442
Woodcock-Johnson III Word Attack	331	1.08	0.90	0.07	.234
TOWRE Sight Word Efficiency	344	0.10	0.54	0.01	.851
TOWRE Phonetic Decoding Efficiency	344	-0.19	0.50	-0.02	.712

The standardized effect sizes calculated using Glass's Δ method (with the impact estimate as the numerator and the control group standard deviation as the denominator) ranged from -0.11 on the TOSREC to 0.09 on the CTOPP Elision. Exhibit 13 displays descriptive statistics (means, standard deviations, and range) for the overall sample.

Exhibit 13
Individual Test Descriptive Statistics

Test	Treatment			Control		
	M	*SD*	Range	*M*	*SD*	Range
TOSREC[a]						
Pretest	30.06	15.77	1–90	28.93	16.17	1–69
Posttest	31.55	16.46	1–80	33.10	16.40	1–85
CTOPP Elision[b]						
Pretest	22.38	6.56	0–33	22.58	6.58	0–34
Posttest	23.97	6.22	0–33	23.53	6.22	0–34
Woodcock-Johnson III Word Identification[a]						
Pretest	42.45	15.41	1–81	41.61	16.43	1–81
Posttest	49.82	17.43	1–87	48.59	17.22	1–82
Woodcock-Johnson III Word Attack[a]						
Pretest	44.13	16.11	1–94	43.09	15.48	1–85
Posttest	49.24	16.17	4–99	47.35	14.53	4–85
TOWRE Sight Word Efficiency[b]						
Pretest	62.56	10.10	26–85	62.40	10.79	16–87
Posttest	67.07	10.49	33–92	66.82	10.74	16–95
TOWRE Phonetic Decoding Efficiency[b]						
Pretest	30.19	10.41	5–54	30.13	10.95	6–59
Posttest	33.83	10.64	9–60	33.96	10.71	7–64

Note. Treatment total *n* = 173. Control total *n* = 171.
[a]Assessment analyzed using normal curve equivalent scores. [b]Assessment analyzed using raw scores.

CST Outcomes

Analysis of CST pretest and posttest scores revealed no significant differences between *System 44* students and the control group students on CST gains, β = 4.01, *p* = .344. The standardized effect size was 0.09. Exhibit 14 presents descriptive statistics (means, standard deviations, and range) for the overall sample.

Exhibit 14
CST Descriptive Statistics

Test	Treatment			Control		
	M	*SD*	Range	*M*	*SD*	Range
Pretest	317.27	34.22	184–404	311.77	35.02	211–402
Posttest	337.09	43.22	215–455	330.46	43.02	215–425

Note. Treatment total $n = 140$. Control total $n = 147$. Pretest data available for only 287 students; posttest data available for 337 students.

An alternate chi-square analysis examined the percentage of students who achieved proficiency—scored at the proficient or advanced performance level—on the CST. Exhibit 15 presents pretest and posttest proficiency results for the overall sample. Results showed an increase in the percentage of students proficient at posttest compared to pretest for both the treatment and control groups. Although the percentage increase was slightly higher for the treatment group than for the control group, the difference between the treatment and control group percentages at posttest were not significant. Appendix E provides further breakdown of the percentage of students in the overall sample who performed at each of the 5 performance levels (far below basic, below basic, basic, proficient, and advanced) in Exhibit E1. Exhibit E2 presents the percent of students achieving proficiency by student subgroups.

Exhibit 15
Students Achieving Proficiency on CST

Test	Percent of Students		χ^2	*p*
	Treatment	Control		
Pretest	11	12	0.05	.819
Posttest	41	32	2.37	.124

Note. Treatment total $n = 140$. Control total $n = 147$. Pretest data available for only 287 students; posttest data available for 337 students.

SRI and SPI Outcomes

Multilevel modeling on SRI and SPI outcomes showed positive results for the overall sample. The impact was greater for the treatment group students than the control group students on the SRI, $\beta = 45.02$, $p = .008$; the effect size on the SRI was 0.21. The treatment group students performed similarly to the control group students on 2 of the SPI accuracy tests: SPI Letter Name Accuracy and SPI Sight Word Accuracy. However, the treatment group students performed significantly better than the control group students on all SPI fluency tests and on 2 of the accuracy tests. Exhibit 16 presents the impact estimates for the overall sample.

Exhibit 16
SRI and SPI Impact Estimates

Test			Estimated Impact		
	n	Impact (β)	*SE*	Effect Size	*p*
SRI	332	45.02	16.64	0.21	.008
SPI Letter Name Accuracy	293	0.27	0.51	0.06	.604
SPI Sight Word Accuracy	293	0.03	0.30	0.01	.916
SPI Sight Word Fluency	293	1.74	0.50	0.36	.001
SPI Nonsense Word Accuracy	293	2.00	0.37	0.52	.000
SPI Nonsense Word Fluency	293	2.84	0.54	0.58	.000
SPI Overall Accuracy	293	1.99	0.56	0.33	.000
SPI Overall Fluency	293	4.70	0.88	0.58	.000

The standardized effect sizes calculated using Glass's Δ method ranged from 0.01 to 0.58. The effect sizes on tests of fluency were all moderate (0.36, 0.58, and 0.58 for SPI Sight Word Fluency, SPI Nonsense Word Fluency, and SPI Overall Fluency, respectively). The effect sizes on 2 of the accuracy tests—SPI Nonsense Word Accuracy and SPI Overall Accuracy—were also moderate (0.52 and 0.33, respectively). Exhibit 17 displays descriptive statistics (means, standard deviations, and range) for the overall sample.

Exhibit 17
SRI and SPI Descriptive Statistics

Test	Treatment			Control		
	M	*SD*	Range	*M*	*SD*	Range
SRI						
Pretest	404.40	174.96	0–907	401.56	202.14	0–873
Posttest	585.46	207.77	0–1,040	541.45	218.75	0–1,041
SPI Letter Name Accuracy						
Pretest	96.19	11.52	18–100	96.11	12.15	0–100
Posttest	98.47	3.85	82–100	98.27	4.88	64–100
SPI Sight Word Accuracy						
Pretest	21.32	3.80	9–28	21.23	4.08	9–30
Posttest	23.95	3.16	15–30	23.92	3.47	14–30
SPI Sight Word Fluency						
Pretest	6.54	3.34	0–14	7.01	3.17	0–14
Posttest	11.01	4.62	3–23	9.6	4.77	0–24

Exhibit continues

Exhibit 17 (continued)

Test	Treatment			Control		
	M	*SD*	Range	*M*	*SD*	Range
SPI Nonsense Word Accuracy						
Pretest	20.82	3.94	10–29	20.55	3.73	9–30
Posttest	25.05	3.17	14–30	22.99	3.82	10–30
SPI Nonsense Word Fluency						
Pretest	6.97	3.47	0–18	7.14	3.45	0–14
Posttest	12.02	5.39	1–22	9.42	4.86	0–21
SPI Overall Accuracy						
Pretest	42.14	6.53	25–57	41.79	6.22	21–56
Posttest	49.00	5.55	34–60	46.9	6.08	27–59
SPI Overall Fluency						
Pretest	13.51	5.23	1–23	14.15	5.20	1–22
Posttest	23.03	8.87	4–43	19.02	8.17	0–38

Note. One school assessed only a subset of students at posttest. For that school SRI posttest data were available for some treatment and control students and were retained in the analyses. SPI data were available for a subset of treatment students only and were removed from the analyses. SRI Treatment total $n = 173$. Control total $n = 159$. SPI Treatment total $n = 147$. Control total $n = 146$.

Differential Effects of *System 44* on Subgroups of Students

The hierarchical linear models conducted for each of the 6 individual reading test outcomes and the CST, SRI, and SPI outcomes consistently revealed main effects for special education (see Appendix D). Specifically, special education students scored significantly lower than non-special education students on the TOSREC, CTOPP Elision, Woodcock-Johnson III Word Identification, Woodcock-Johnson III Word Attack, CST, SRI, SPI Sight Word Fluency, SPI Nonsense Word Accuracy, SPI Nonsense Word Fluency, and SPI Overall Fluency tests. Exhibits 18–20 present the pretest and posttest means and standard deviations for special education and non-special education students for each test. Exhibits F1 through F9 in Appendix F present mean pretest, posttest, and gain scores on individual reading test, SRI, and SPI Overall Accuracy and Fluency outcomes for additional subgroups of students.

Exhibit 18
Individual Test Descriptive Statistics for Special Education Students

Test	Special Education		Non-Special Education	
	M	*SD*	*M*	*SD*
TOSREC[a]				
Pretest	20.91	16.38	32.98	14.42
Posttest	22.78	16.09	36.18	14.94
CTOPP Elision[b]				
Pretest	19.44	7.15	23.76	5.85
Posttest	20.94	7.04	24.93	5.43
Woodcock-Johnson III Word Identification				
Pretest	29.48	15.95	47.15	12.75
Posttest	35.64	18.67	54.75	13.23
Woodcock-Johnson III Word Attack[a]				
Pretest	33.22	16.05	48.05	13.44
Posttest	38.24	15.26	52.59	13.31
TOWRE Sight Word Efficiency[b]				
Pretest	57.17	12.82	64.72	8.31
Posttest	61.80	12.88	69.12	8.63
TOWRE Phonetic Decoding[b] Efficiency				
Pretest	25.50	11.13	32.12	9.85
Posttest	29.76	11.35	35.64	9.88
CST[c]				
Pretest	302.74	37.66	318.23	32.87
Posttest	331.10	52.19	334.53	39.93

Note. Special education total $n = 102$. Non-special education total $n = 242$. Both treatment and control included.
[a]Assessment analyzed using normal curve equivalent scores. [b]Assessment analyzed using raw scores [c]Assessment analyzed using scaled scores.

Exhibit 19 presents the means and standard deviations for special education and non-special education students on the CST. Although the results indicated that the special education students performed lower than the non-special education students at pretest, the special education and non-special education students performed similarly at posttest.

Exhibit 19
CST Descriptive Statistics for Special Education Students

	Special Education		Non-Special Education	
Test	*M*	*SD*	*M*	*SD*
Pretest	302.74	37.66	318.23	32.87
Posttest	331.10	52.19	334.53	39.93

Notes. Special education total *n* = 70. Non-special education total *n* = 217. Both treatment and control group included. CST analyzed using scaled scores.

To determine whether these effects were a result of *System 44*—that is, did special education *System 44* students make significantly greater gains than special education control group students?—the moderating effects of special education status on treatment were analyzed. The results revealed no significant moderating effects. Similar tests of moderating effects were conducted for SRI and SPI outcomes and again no moderating effects of *System 44* and special education status were found for any of the SRI and SPI outcomes. Thus the observed effects of *System 44* were equivalent for special education and non-special education students (see Exhibit 20).

Although the most consistent demographic subgroup main effect observed across tests was among special education students, the main effect of sex was significant for the TOSREC, on which girls scored higher than boys, and Woodcock-Johnson III Word Attack, on which boys scored higher than girls. Nevertheless, overall the effects of *System 44* did not vary by demographic subgroup.

Exhibit 20
SRI and SPI Descriptive Statistics for Special Education Students

	Special Education		Non-Special Education	
Test	*M*	*SD*	*M*	*SD*
SRI[a]				
Pretest	367.92	202.94	416.50	180.85
Posttest	484.54	246.60	594.99	191.89
SPI Letter Name Accuracy[b]				
Pretest	98.42	4.04	95.38	13.39
Posttest	98.18	4.21	98.44	4.45
SPI Sight Word Accuracy[b]				
Pretest	20.32	4.48	21.60	3.69
Posttest	23.15	3.78	24.20	3.10

Exhibit continues

Exhibit 20 (continued)

Test	Special Education		Non-Special Education	
	M	*SD*	*M*	*SD*
SPI Sight Word Fluency[b]				
Pretest	6.65	3.58	6.81	3.15
Posttest	9.89	5.17	10.45	4.59
SPI Nonsense Word Accuracy[b]				
Pretest	19.61	3.99	21.05	3.71
Posttest	22.77	4.01	24.44	3.43
SPI Nonsense Word Fluency[b]				
Pretest	5.96	3.29	7.43	3.43
Posttest	9.32	5.55	11.20	5.12
SPI Overall Accuracy[b]				
Pretest	39.93	6.83	42.65	6.07
Posttest	45.92	6.79	48.64	5.42
SPI Overall Fluency[b]				
Pretest	12.61	5.49	14.24	5.06
Posttest	19.22	9.25	21.65	8.51

[a]SRI special education total $n = 92$. SRI non-special education total $n = 240$. [b]SPI special education total $n = 74$. SPI non-special education total $n = 219$.

Association Between Program Implementation and *System 44* Gains

The results of the implementation analyses showed some variation in implementation across schools. To explore the possible effects of implementation on *System 44* impact, the evaluation team conducted nonexperimental analyses to address the following question: To what extent is program implementation associated with treatment impact?

The data collected from the teacher surveys and classroom observations were used to develop 5 teacher-level variables (aggregated by school level) used to assess *System 44* program implementation in relation to test outcome gains: teacher's prior use of *System 44,* total number of times the teacher used *System 44* materials during small group instruction, average number of students using *System 44* paperback books or the *Decodable Digest* during independent work time, instructional management, and instructional delivery. Prior use of *System 44* (yes/no) was collected from the fall 2010 teacher surveys. The variable measuring the number of times the teacher used *System 44* materials was a sum across fall, winter, and spring classroom observations. The average number of students using *System 44* paperback books or the *Decodable Digest* during independent work time was an average across the 3 classroom observation time points. The instructional management variable comprised 2 measures (used flexible groups, used differentiated support) that were averaged across fall, winter, and spring. Similarly, the instructional delivery variable comprised 2 measures (executed the lesson well, actively tried to engage students) that were averaged across the 3 observation points.

Multilevel models identical to those used to measure impact—but with the 5 teacher-level variables (aggregated by school level) added to Level 2 of the model—were used to estimate the effects of implementation on the impact of the intervention on spring 2011 test outcomes. The addition of the teacher-level variables to the model revealed that none of the 5 variables— teacher's prior use of *System 44*, total number of times the teacher used *System 44* materials during small group instruction, average number of students using *System 44* paperback books or the *Decodable Digest* during independent work time, instructional management, and instructional delivery—were associated with treatment effects.

Association Between Software Usage and *System 44* Gains

Because student use of the *System 44* software is an essential component of the program, the evaluation team examined how students' *System 44* software usage was related to improved individual test scores, CST scores, and SRI and SPI scores by analyzing the outcome gains in relation to the following factors: program exit date and total number of series topics completed. Exhibits G1 and G2 in Appendix G present characteristics of students by exit date, total number of series topics completed, and Exhibits H1 and H2 in Appendix H present baseline descriptive data. Additionally, because a student's initial decoding status on the SPI determines the starting series in *System 44*, Exhibit G3 presents characteristics of students by initial decoding status, and Exhibit H3 presents baseline descriptive data by initial decoding status. Appendix I presents *System 44* software usage descriptive data by student subgroups.

Program Exit Date

Although the *System 44* program was intended to be implemented for a full year, 26% of the treatment group students exited the program in winter (i.e., prior to March 2011), an additional 33% exited the program in spring (i.e., March or April 2011), and the remaining 41% stayed in the *System 44* program through the end of the school year (i.e., May or June 2011). To examine differences in the characteristics of the students who exited the program at each time point, the evaluation team conducted baseline equivalence tests between the 3 groups. Exhibit H1 in Appendix H presents baseline descriptive data for the winter, spring, and end-of-year exits.

The students who stayed in the *System 44* program through the end of the year had significantly lower pretest scores than the students who exited the program in winter or spring on all tests except SPI Letter Name Accuracy. The only demographic characteristic that differed across the 3 groups was special education status—that is, those students who stayed in the program through the end of the year were significantly more likely to be in special education than the students who exited in the spring. For some tests the significant pretest score discrepancies were between the end-of-year exits and the other 2 groups. For example, there was no difference between the students who exited in winter or spring on mean pretest CST scores (Ms = 322.51 and 324.42, respectively), but the differences between those students who exited in winter or spring and the students who exited at the end of the year (M = 300.90) were significant. On other tests the students who exited in winter scored significantly higher at pretest than the students who exited in spring, and the students who exited in spring scored significantly higher at pretest than the students who exited at the end of the year. The average pretest SRI Lexile scores for students exiting in winter, spring, and end of year, for example, were 498.91, 408.14, and 343.66, respectively.

To address whether overall test score gains were significant and whether the timing of program exit factored into students' gains, repeated measures analysis of variance (ANOVA) models were used to assess differences between program exit date categories (i.e., winter, spring, end

of year) and change in outcomes. The analyses revealed that overall gains in scores were significant for all tests except the TOSREC. Paired t-test analyses were conducted to assess whether the lack of gains observed on the TOSREC varied across subgroups. The results showed that students who exited in the spring made marginally significant gains on the TOSREC, $t(56) = 1.78$, $p = .08$, but the students who exited in the winter and the end of the year made essentially no gains.

In addition, the results of the repeated measures ANOVA analyses revealed that timing of program exit did not factor into students' gains on any test except one—that is, the gains were similar for the winter, spring, and end-of-year subgroups. The one exception was the SPI Overall Fluency test, on which students who exited the program in winter or spring made significantly greater gains than did students who exited at the end of the year, $F(2, 165) = 3.60$, $p < .05$.

Topic Completion

The *System 44* students were expected to complete all 160 topics covered in the 25 series that compose the software component of the program. The analysis conducted by the evaluation team revealed that approximately half of the *System 44* students completed all 160 topics (average number of topics completed: 133). The students were categorized by the number of topics completed: fewer than 100 topics ($n = 43$), between 100 and 159 topics ($n = 37$), and all 160 topics ($n = 92$). Repeated measures ANOVA models were used to assess differences between the 3 topic completion groups and change in outcomes.

The ANOVA results showed significant differential gains between the 3 groups on the following tests: Woodcock-Johnson III Word Identification ($p < .05$), SPI Sight Word Fluency ($p < .001$), SPI Nonsense Word Fluency ($p < .001$), and SPI Overall Fluency ($p < .001$). Specifically, those students who completed fewer than 100 topics showed significantly less gain on these 4 tests than the students who completed between 100 and 159 topics and the students who completed all 160 topics (see Exhibits 21–24). In addition, on 2 of the 4 tests for which differential gains were observed (SPI Sight Word Fluency and SPI Overall Fluency), the students who completed all 160 topics showed significantly greater gains than the students who completed between 100 and 159 topics. Additional analyses examined differences between these 3 groups on baseline characteristics (see Exhibit H2). Those students who completed fewer than 100 topics had significantly lower pretest scores than the students who completed more than 100 topics on all tests with the exception of SPI Letter Name Accuracy.

Exhibit 21
Woodcock-Johnson III Word ID Gains by Number of Topics Completed
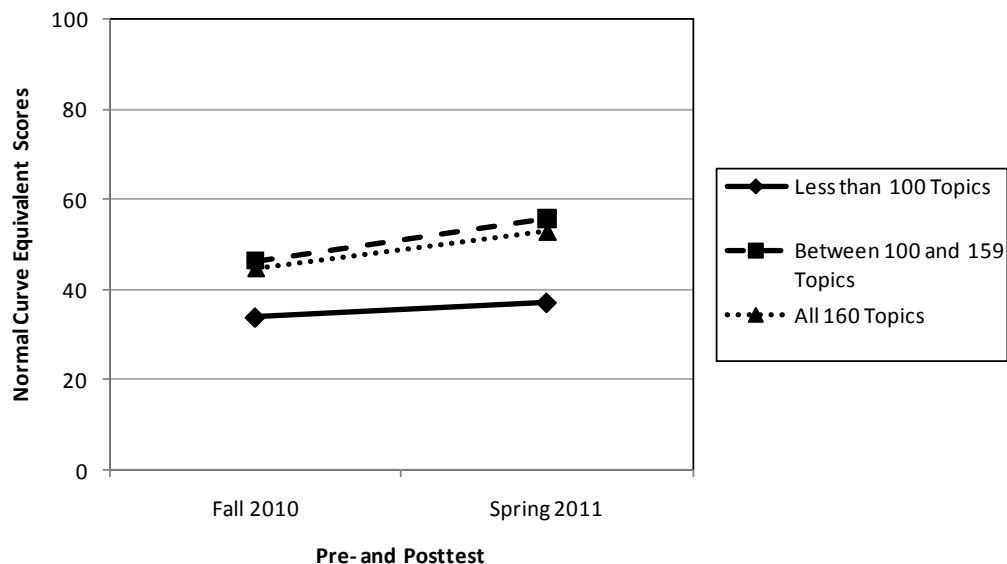
Note. Scores range from 1–100. Less than 100 Topics *n* = 43,
Between 100 and 159 Topics *n* = 37, All 160 Topics *n* = 92.

Exhibit 22
Sight Word Fluency Gains by Number of Topics Completed
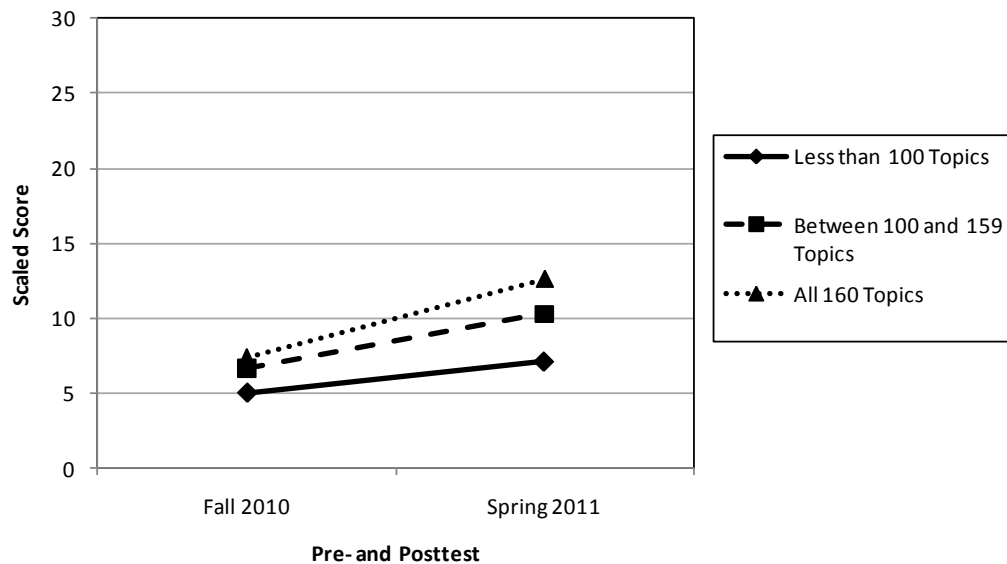
Note. Scores range from 1–30. Less than 100 Topics *n* = 43,
Between 100 and 159 Topics *n* = 37, All 160 Topics *n* = 92.

Exhibit 23
SPI Nonsense Word Fluency Gains by Number of Topics Completed
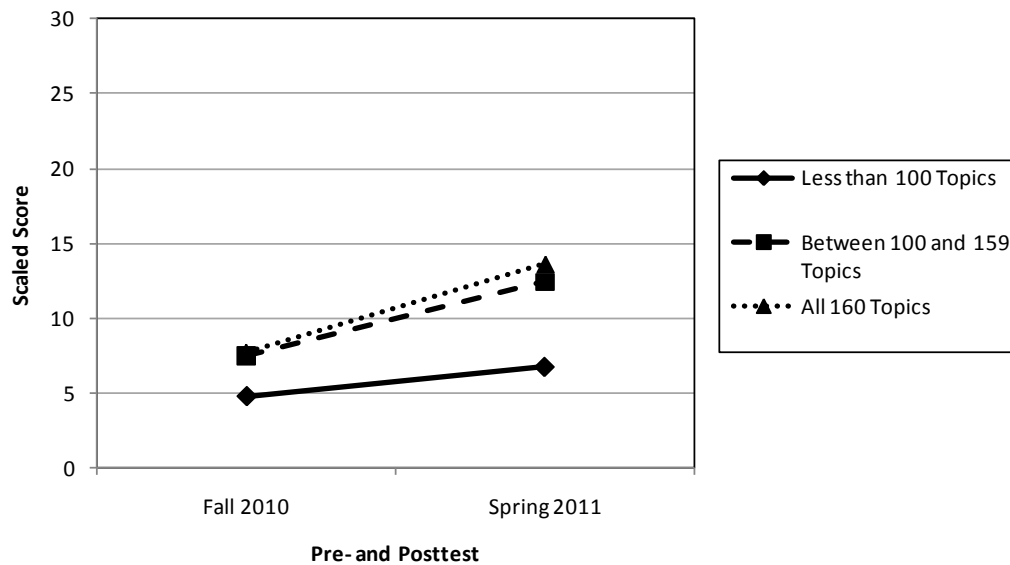
Note. Scores range from 1–30. Less than 100 Topics *n* = 43,
Between 100 and 159 Topics *n* = 37, All 160 Topics *n* = 92.

Exhibit 24
SPI Overall Fluency Gains by Number of Topics Completed
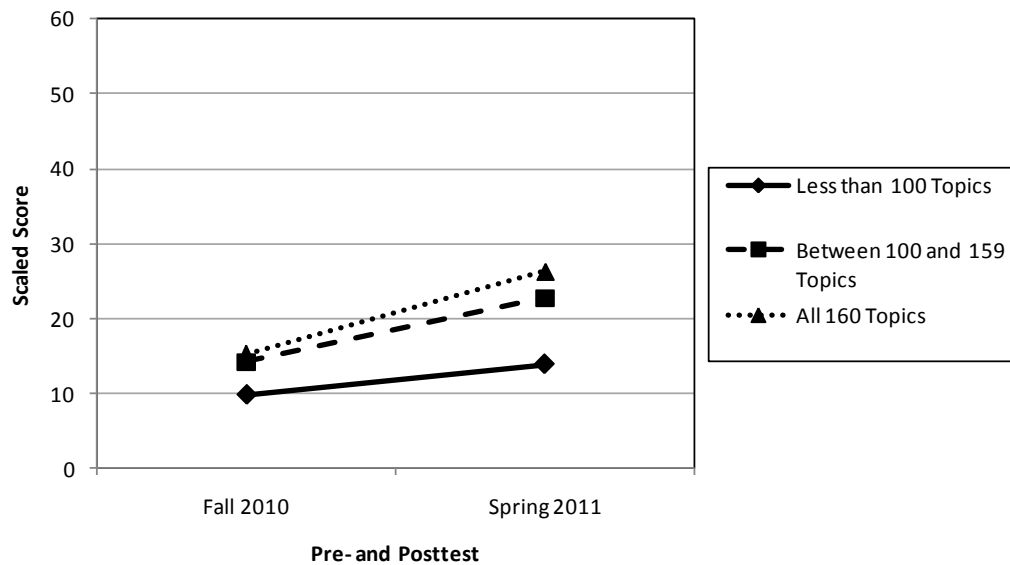
Note. Scores range from 1–60. Less than 100 Topics *n* = 43,
Between 100 and 159 Topics *n* = 37, All 160 Topics *n* = 92.

Conclusion and Recommendations

Of the 425 students in Grades 4–8 who met the eligibility criteria for *System 44*, 216 were randomly assigned to the treatment group and 209 were randomly assigned to the control group. The groups were equivalent in terms of sex, eligibility for free or reduced-price meals, English proficiency, special education status, ethnicity, and CST scores. Of the randomly assigned students, 172 treatment and 173 control group students received the allocated intervention or control group condition as planned.

Local testers individually administered a battery of 6 standardized reading tests to all treatment and control group students in fall 2010 and spring 2011. In addition, the evaluation team assessed change on the CST English-Language Arts subtest, the SRI, and the SPI. The evaluation team also administered surveys to the *System 44* teachers in fall 2010 and spring 2011 and to a sample of control group teachers in spring 2011; observed *System 44* classes 3 times during the 2010–2011 school year (November, February, and April); and interviewed *System 44* teachers, principals, and district staff in spring 2011.

The evaluation team analyzed the data collected to address 5 research questions:

1. **What contextual factors are involved in the implementation of *System 44* (i.e., factors that promote or hinder successful implementation of the program)?**

Although the control group teachers had more teaching experience and advanced degrees, the *System 44* teachers were more likely to have Education Specialist or Reading Specialist certification and to have prior experience teaching *System 44* or *Read 180.* Overall, the treatment group teachers gave the *System 44* professional development high ratings, although the mean ratings were somewhat lower in spring 2011 than in fall 2010. They were pleased with the quantity and quality of the training and believed that it prepared them to use the *System 44* program in their classrooms. In response to 10 questions designed to test their knowledge of *System 44* program components, on average the teachers answered correctly 80% of the questions in fall 2010 and 81% of the questions in spring 2011.

The evaluation team assessed fidelity of *System 44* implementation through classroom observations and teacher self-report (surveys and interviews). The adequacy of classroom setup improved from 58% of the classrooms in the fall to 75% in the winter and 100% in the spring. Minutes of instruction were consistent across all 3 observation points: 9 of the 12 classrooms provided at least 55 minutes of *System 44* instruction daily and the remaining classrooms provided 45 to 49 minutes of instruction daily. One third of the teachers reported providing whole group instruction daily, 17% did so 2 or 3 times a week, and the remaining 50% did so once a week or less. During teacher-led small group instruction, the observers most frequently noted the use of the *System 44* flip chart, letter tiles, and the *Decodable Digest.* During independent work time, the observers most frequently noted the use of the *44Book, System 44* paperback books, and the *Decodable Digest.*

The observers rated instructional management and instructional delivery lowest in the fall and highest in the winter. Ratings on 2 key instructional management items were lowest in the fall ("use flexible groups for students based on instructional needs" and "differentiate support based on students' needs") but were higher in the winter. At the time of the spring interviews, 75% of

the teachers reported having used the SAM Differentiated Instruction Report at least once a week to identify topics for small group instruction.

The *System 44* teachers, school administrators, and district staff also identified several barriers to implementation. Two of the greatest challenges occurred at the beginning of the school year and were later resolved: scheduling conflicts (particularly at the middle school level) and technology problems. Other challenges included teacher reluctance to release students for pull–out interventions, implementation variations, perceived shortcomings of the *System 44* materials, disruption caused by transitioning between activities, passive consent required for the evaluation, and inconveniences related to participating in the evaluation.

2. What are teachers' perceptions of the program?

Prior to the start of the school year, the teachers expected *System 44* to be more effective than the reading intervention they had used the prior year; at the end of the school year the teachers gave *System 44* significantly higher ratings in terms of its perceived effectiveness for teaching phonemic awareness than the prior programs. Effectiveness ratings for phonics and fluency were also higher for *System 44*, but the differences were not statistically significant. Effectiveness ratings for vocabulary and comprehension were essentially the same for *System 44* and the prior programs. When asked which features of *System 44* they liked best, the teachers mentioned several software-related features: being able to fast track students through skills they had already mastered, the software's ability to individualize instruction according to students' needs and to revisit skills that students had not yet mastered, and the sense of accomplishment and empowerment students gained as they progressed through the software. The teachers also liked the SAM reports they could use to track student progress and group students for teacher-led instruction on specific skills, and the program materials.

3. What are the effects of *System 44* on student outcomes? Specifically, how do changes in word reading accuracy, fluency, and comprehension achieved by *System 44* students compare to changes achieved by a control group?

The data analyses revealed intervention effects on the SRI, the 3 SPI fluency tests, and 2 of the SPI accuracy tests (Nonsense Word and Overall Accuracy). No significant effects were found on any of the 6 individual reading tests, the CST, or SPI Letter Name or Sight Word Accuracy. Although intervention effects were not observed on individual reading tests, analyses revealed significant main effects on all individual reading tests—that is, treatment and control group students alike made significant gains between pretest and posttest on all outcomes.

4. How does *System 44* differentially affect subgroups of students? Specifically, how do changes in word reading accuracy, fluency, and comprehension achieved by specific subgroups of *System 44* students (English language learners, students in special education, students receiving free or reduced-price meals, and ethnic minority students) compare to changes achieved by subgroups of control group students?

Analyses on subgroups of students revealed that special education students scored significantly lower on many of the outcome measures than non-special education students (TOSREC, CTOPP Elision, W-J Word Identification, W-J Word Attack, CST, SRI, and SPI Sight Word Fluency, Nonsense Word Fluency, Overall Fluency, and Nonsense Word Accuracy). However, there were no moderating effects of *System 44* and special education status on any of the outcomes—that is, the observed effects of *System 44* were equivalent for special education and non-special education students.

5. **What is the association between *System 44* effects and program implementation—are changes in *System 44* participants' word reading accuracy, fluency, and comprehension associated with variation in program implementation?**

The evaluation team used data collected from teacher surveys and classroom visits to develop 5 teacher-level variables for assessing the extent to which program implementation is associated with program impact: teacher's prior use of *System 44*, total number of times the teacher used *System 44* materials during small group instruction, average number of students using *System 44* paperback books or the *Decodable Digest* during independent work time, instructional management, and instructional delivery. None of these implementation variables were associated with treatment effects.

The evaluation team analyzed gains on each outcome measure in relation to program exit date and total number of topics completed. Students were grouped into 3 exit date categories: winter (prior to March 2011), spring (March or April 2011), and end of year (May or June 2011). Not surprisingly, students who stayed in the *System 44* program through the end of the school year had significantly lower pretest scores than students who exited in the winter or spring. Students in the end-of-year group were also significantly more likely to be in special education than students in the spring exit group. Repeated measures ANOVA analyses revealed that exit date did not factor into students' gains except for one assessment—the SPI Overall Fluency subtest, in which students who exited in winter or spring made significantly greater gains than students who stayed in the *System 44* program through the end of the school year.

Approximately half of the *System 44* students completed all 160 topics, and the average number of topics completed was 133. Students were grouped by number of topics completed (fewer than 100 topics, between 100 and 159 topics, and all 160 topics), and baseline equivalence tests showed significant differences between the 3 groups on all but 1 pretest measure. Repeated measures ANOVA analyses examined differences between 3 topic completion groups:. Analyses revealed that there were differential effects between groups on 4 outcomes. Specifically, students who completed fewer than 100 topics made significantly less gain on W-J Word Identification, SPI Sight Word Fluency, SPI Nonsense Word Fluency, and SPI Overall Fluency than students in the other completion groups. In addition, on 2 of these tests (SPI Sight Word Fluency and SPI Overall Fluency) the students who completed all 160 topics showed significantly greater gains than the students who completed between 100 and 159 topics.

Recommendations

The evaluation team makes several recommendations based on the findings summarized in this report.

1. Although teachers reported feeling well-prepared to teach *System 44* after their initial training, observed variations in program implementation suggest that more in-depth training might help facilitate the implementation of *System 44* in the classroom. For example, based on classroom observations, teachers tended to implement flexible groups and differentiated support less in the fall than in winter and spring. In addition, certain program materials such as *System 44* audiobooks appeared to be under-utilized year-round. RMC Research recommends modifying the initial training session to include an additional half day or full day to provide more in-depth opportunities for teachers to practice using SAM reports to identify students in need of differentiated instruction and to group students. During this additional time, more time could also be spent demonstrating how specific *System 44* resources might be used to address some of those student needs.

2. There was a fair amount of variation between teachers in their management of rotations during classroom visits. A few teachers implemented a system in which students managed their own rotations between computers and other activities (e.g., students moved off the computer at the end of a topic to work on associated print materials), whereas other teachers adhered to a schedule and stopped computer work at a particular point in time and asked students to rotate. The latter strategy ensured at least 25 minutes on the computer software, but took more time for the rotation because students had to come to a stopping point before they could exit the software, which left the next group having to wait for a free computer. Thus the evaluation team recommends that more specific direction about managing rotations between computers, small groups, and independent work be emphasized in the training.

3. During the end of year interviews, teachers reported not being familiar enough with the *System 44* software to address certain questions that the students had. Because teachers' exposure to the software itself is fairly limited, it might be useful for teachers to have the opportunity to explore the program on their own. Thus RMC Research recommends that *System 44* teachers have a teacher-license to the software program that allows them to explore its different features as needed.

4. A key finding of this study based on groupings of students by exit date and number of topics completed was that certain groups of students who participated in *System 44* looked very different at baseline. Some of the students lacked only specific skill sets and progressed through the 160 topic areas quickly, whereas other students lacked more fundamental skills and took much longer to progress through the program. Based on exit dates, 3 distinct groups were evident: students requiring approximately 1 semester to complete the program, students requiring 1 year to complete the program, and students who were still only part way through the program after 1 school year. Although all groups made progress, the group that stayed in the program through the end of the year scored significantly lower at posttest than students who exited the program in winter or spring. Grouping by number of topics completed similarly produced groups that differed significantly at baseline. Based on these findings, the evaluation team recommends that the *System 44* model of instruction and duration of instruction be tailored to the baseline characteristics of the students. A student's performance on the SRI, for example, could be used to help inform teachers about the type of model that would be most effective for that student—a semester model, one-year model, or multi-year model, for example.

5. Findings from this study demonstrated variation among the tests used to measure impact. Most of the individual tests selected for measuring program impact did not reveal any differences between the treatment and control groups, whereas other measures (SRI and SPI) showed significant *System 44* impacts. Given these discrepancies, the evaluation team recommends that further research be conducted to identify measures that may be more sensitive to the skills taught in the *System 44* program.

Appendix A
Data Collection Instruments

System 44 Teacher Survey

Murrieta Unified School District

August 2010

About This Survey

This survey contains questions about your background and questions about the *System 44* program that you will be implementing this school year. Your responses are important in helping us understand which factors contribute to the success of the program and what issues need to be addressed.

Please write your answers directly on the survey by checking the appropriate boxes or by writing your response in the space provided. Your individual responses will be kept confidential and will not be shared with your principal or other school or district personnel. Summary data from this survey will be shared with Scholastic staff to assist in planning for *System 44* implementation.

We expect it will take approximately 15 minutes to complete the survey.

Thank you very much for your help.

Teacher Background

1. Are you female or male?

    $\Box_1$ Female

    $\Box_2$ Male

2. How many years have you worked as a full-time teacher in public schools*? Write in the number of years below. Count part of a year as one year.*

	Number of years
a. Total number of years as a teacher (do not include student teaching)	_____
b. Total number of years as a teacher in Murrieta Unified School District	_____
c. Total number of years as a teacher at your current school	_____

3. What is the *highest* degree you have obtained as of September 2010? *Mark (X) only one box.*

    $\Box_1$ Bachelor's (B.A., B.S., B.E., etc.)

    $\Box_2$ Master's degree (M.A., M.A.T., M.B.A., M.Ed., M.S., etc.)

    $\Box_3$ Education specialist or certification at least one year beyond master's level

    $\Box_4$ Doctorate or professional degree (Ph.D., Ed.D., M.D., L.L.B., J.D., D.D.S.)

    $\Box_5$ Other (please specify: _____)

4. Which of the following describes the teaching certificate(s) you currently hold in California? *Mark (X) all that apply.*

    $\Box_a$ Single subject　　　　　　　　$\Box_f$ Reading Specialist

    $\Box_b$ Multiple subject　　　　　　　$\Box_g$ Administrative Services

    $\Box_c$ Preliminary　　　　　　　　　$\Box_h$ District Intern

    $\Box_d$ Professional Clear　　　　　　$\Box_i$ CLAD or BCLAD (Bilingual, Crosscultural, Language and Academic Development)

    $\Box_e$ Education Specialist Instruction

5. I have used *System 44* in my classroom prior to this year.

    $\Box_1$ Yes　　　　　　　　$\Box_2$ No

6. I have used *Read 180* in my classroom prior to this year.

    $\Box_1$ Yes　　　　　　　　$\Box_2$ No

Professional Development

7. Have you had training or support (e.g., in-classroom coaching, online support) provided by a Scholastic representative or other experienced *System 44* user prior to today's training? *Mark (X) all that apply.*

    ☐_a Have not received any training in *System 44* prior to today's training

    ☐_b Attended a similar *System 44* training held in a prior year

    ☐_c Received other support for *System 44* from a Scholastic representative in a prior year

    ☐_d Received other support from another experienced *System 44* user in a prior year

    ☐_e Other (please specify: _____)

8. Please rate the extent to which you agree or disagree with the following statements regarding the *System 44* training activities provided today. *Mark (X) only one box per row.*

	Strongly disagree				Strongly agree
a. The teacher training on *System 44* prepared me to use the program in my classroom.	☐₁	☐₂	☐₃	☐₄	☐₅
b. I am pleased with the *amount* of *System 44* professional development I received.	☐₁	☐₂	☐₃	☐₄	☐₅
c. I am pleased with the *quality* of *System 44* professional development I received.	☐₁	☐₂	☐₃	☐₄	☐₅

Instructional Practices

9. Please indicate which of the following teaching strategies and materials you used **with your struggling readers** <u>last year (2009–2010)</u>. *Mark (X) only one box per row.*

    If you did not teach last year but taught in previous years, please describe your use of these teaching strategies and materials when you last taught. If this is your first year teaching, please skip to Question 9.

	Central to my reading instruction	Small part of my reading instruction	Not Part of my reading instruction
Instruction			
a. Provide time in reading block for students to practice skills on their own.	☐₁	☐₂	☐₃
b. Provide materials for at-home practice of skills introduced in class.	☐₁	☐₂	☐₃
c. Provide extra reading instructional time for struggling readers.	☐₁	☐₂	☐₃
d. Include writing opportunities in reading instruction.	☐₁	☐₂	☐₃
e. Build spelling practice into reading instruction.	☐₁	☐₂	☐₃
f. Develop reading skills using science and social studies texts.	☐₁	☐₂	☐₃

	Central to my reading instruction	Small part of my reading instruction	Not Part of my reading instruction

Grouping

g. Teach whole class reading lessons. $\square_1$ $\square_2$ $\square_3$

h. Work one-to-one with students on reading. $\square_1$ $\square_2$ $\square_3$

i. Work with small groups of students. $\square_1$ $\square_2$ $\square_3$

j. Group students based on skill levels. $\square_1$ $\square_2$ $\square_3$

k. Group students based on need for additional instruction in specific, targeted skills. $\square_1$ $\square_2$ $\square_3$

l. Group students based on mixed abilities (pairs or cooperative groups). $\square_1$ $\square_2$ $\square_3$

Reading Materials

m. Use core reading series. $\square_1$ $\square_2$ $\square_3$

n. Use supplementary reading materials. $\square_1$ $\square_2$ $\square_3$

o. Use trade books. $\square_1$ $\square_2$ $\square_3$

p. Use books that are easy to decode. $\square_1$ $\square_2$ $\square_3$

q. Use separate intervention materials for some students. $\square_1$ $\square_2$ $\square_3$

r. Use reading software/technology. $\square_1$ $\square_2$ $\square_3$

s. Use teacher-made materials. $\square_1$ $\square_2$ $\square_3$

Assessments

t. Use test results to organize instructional groups. $\square_1$ $\square_2$ $\square_3$

u. Use informal reading inventories. $\square_1$ $\square_2$ $\square_3$

v. Conduct miscue analysis, analyzing errors students make while reading aloud. $\square_1$ $\square_2$ $\square_3$

w. Use tests to determine progress on skills. $\square_1$ $\square_2$ $\square_3$

x. Use diagnostic tests to identify students who need reading intervention services. $\square_1$ $\square_2$ $\square_3$

10. Please indicate which of the following reading instructional activities you used **with your struggling readers** last year (2009–2010). *Mark (X) only one box per row.*

If you did not teach last year but taught in previous years, please describe your use of these reading instructional activities when you last taught. If this is your first year teaching, please skip to Question 9.

	Central to my reading instruction	**Small part of my reading instruction**	**Not Part of my reading instruction**
Reading Text			
a. Students reread familiar text.	□₁	□₂	□₃
b. Students confirm or revise predictions after reading.	□₁	□₂	□₃
c. Students generate their own questions about text material.	□₁	□₂	□₃
d. Students identify their comprehension break-downs and use fix-up strategies with a partner.	□₁	□₂	□₃
e. Students orally summarize main events in stories and informational texts.	□₁	□₂	□₃
f. Students use graphic and semantic organizers to track information.	□₁	□₂	□₃
Work With Sounds and Words			
g. I teach specific strategies for decoding unfamiliar words.	□₁	□₂	□₃
h. I teach decoding/phonics skills while reading stories.	□₁	□₂	□₃
i. Students practice reading high frequency words for automaticity.	□₁	□₂	□₃
j. Students use knowledge of root words, prefixes, and suffixes to decode new words.	□₁	□₂	□₃
k. Students work with prefixes and suffixes to change the meaning of words.	□₁	□₂	□₃
l. Students use context clues to identify unknown words.	□₁	□₂	□₃
m. I discuss new and unusual words before reading.	□₁	□₂	□₃
Other Techniques			
n. Students answer questions in writing after reading stories.	□₁	□₂	□₃
o. Students select books from the library for independent reading.	□₁	□₂	□₃
p. Students are given time to read on their own for enjoyment.	□₁	□₂	□₃

11. Please rate the extent to which you agree or disagree with the following statements. *Mark (X) only one box per row.*

My struggling students last year received enough instruction and practice in the following areas to make sufficient gains in reading.	Strongly disagree				Strongly agree
a. phonemic awareness	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
b. phonics	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
c. fluency	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
d. vocabulary	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
e. comprehension	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$

I think *System 44* will be effective this year in helping my students with . . .	Strongly disagree				Strongly agree
a. phonemic awareness.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
b. phonics.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
c. fluency.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
d. vocabulary.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
e. comprehension.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$

System 44 Concepts

The following questions are intended to capture your current understanding of the System 44 program based on either prior knowledge of the program or what you learned in the training today. This information will help us to understand areas that the training did or did not address, and will help guide future training sessions.

12. Which of the following is NOT a skill that is measured by the Scholastic Phonics Inventory? *Mark (X) only one box.*

$\square_1$ Identify sight words

$\square_2$ Recognize letter names

$\square_3$ Identify nonsense words

$\square_4$ Improve phonological awareness

13. Which of the following *System 44* program components is designed to provide students with written practice in applying the skills they are learning in the software? *Mark (X) all that apply.*

☐a Decodable Digest

☐b 44Book

☐c Flip chart

☐d SAM Practice Pages

14. Which of the following *System 44* program components is designed to provide reading fluency practice for students? *Mark (X) all that apply.*

☐a Decodable Digest

☐b *System 44* Library Books

☐c *System 44* Audiobooks

☐d Success Strand

15. Scholastic *Reading Counts!* is . . . *Mark (X) only one box.*

☐1 the *System 44* adaptive software that continuously collects data on student performance.

☐2 a set of quizzes that measure comprehension of each *System 44* paperback book.

☐3 a set of progress monitoring tools given at the end of each *System 44* series.

☐4 a set of motivational videos that students can play when they have successfully completed a *System 44* series of lessons.

16. Which of the following is NOT a feature of *System 44*? *Mark (X) only one box.*

☐1 Using SAM reports for instructional grouping

☐2 Teacher-led instruction in small groups

☐3 Library books that reinforce specific phonics skills

☐4 Successful completion of every software lesson

17. Phonemic awareness is . . . *Mark (X) all that apply.*

☐a the foundation for phonics instruction.

☐b the ability to hear and manipulate individual sounds in spoken words.

☐c the same as phonological awareness.

☐d the recognition that sentences consist of separate words.

18. The Scholastic Achievement Manager (SAM) can . . . *Mark (X) all that apply.*

☐ₐ help teachers form instructional groups for students who need work on the same skills.

☐ᵦ provide detailed, diagnostic information about student strengths and weaknesses.

☐ᵪ allow the teacher to monitor students' ongoing progress on the software.

☐ᵨ provide downloadable assessments for various reading skills.

19. Select the description from the right column that matches each of the four *System 44* Zones listed on the left and enter the matched number in the box:

a. Fluency Zone	☐	1 Explicit instruction in the 44 sounds of the English language and the letters that make each sound
b. Spelling Zone	☐	2 Reading of decodable text with a focus on comprehension
c. Word Zone	☐	3 Instruction and practice in specific spelling rules
d. Smart Zone	☐	4 Modeling and practice in blending sounds

20. Select the description from the right column that matches each of the four *System 44* strands of instruction listed on the left and enter the matched number in the box:

a. Success	☐	1 Builds automatic recognition of high frequency words
b. Word Strategies	☐	2 Read passages to build on skills and improve comprehension
c. The Code	☐	3 Practice in syllable strategies and word analysis
d. Sight Words	☐	4 Direct instruction and practice in letter-sound correspondences

21. Please rate the extent to which you agree or disagree with the following statements regarding the *System 44* program. *Mark (X) only one box per row.*

I understand . . .	Strongly disagree				Strongly agree
a. how the *System 44* software works to individualize instruction and practice for students.	☐₁	☐₂	☐₃	☐₄	☐₅
b. what to do during small group instruction.	☐₁	☐₂	☐₃	☐₄	☐₅
c. how to use SAM to group students for small group instruction.	☐₁	☐₂	☐₃	☐₄	☐₅
d. when to use the Decodable Digest, 44Book, and *System 44* library books for student practice.	☐₁	☐₂	☐₃	☐₄	☐₅
e. how to monitor student progress in *System 44.*	☐₁	☐₂	☐₃	☐₄	☐₅

19.   Some questions I have about *System 44* are . . .

System 44 Teacher Survey

Murrieta Unified School District

April 2011

About This Survey

This survey contains questions about your background and questions about the *System 44* program that you implemented this school year. Your responses are important in helping us understand which factors contribute to the success of the program and what issues need to be addressed.

Please write your answers directly on the survey by checking the appropriate boxes or by writing your response in the space provided. Your individual responses will be kept confidential and will not be shared with your principal or other school or district personnel. Summary data from this survey will be shared with Scholastic staff to assist in understanding *System 44* implementation.

We expect it will take approximately 15 minutes to complete the survey.

Thank you very much for your help.

Prepared by:
RMC Research Corporation
111 SW Columbia Street
Suite 1200
Portland, OR 97201

Professional Development

1. Please rate the extent to which you agree or disagree with the following statements regarding the System 44 training activities provided this year. Mark (X) only one box per row.

	Strongly disagree				Strongly agree	N/A
a. The group training on *System 44* prepared me to use the program in my classroom.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
b. The individual support from Scholastic during the year enhanced my skills in using *System 44* in my classroom.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
c. The individual support from district staff during the year enhanced my skills in using *System 44* in my classroom.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
d. I am pleased with the *amount* of *System 44* professional development I received.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
e. I am pleased with the *quality* of *System 44* professional development I received.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$

2. Which training or support topics were most helpful to you as you implemented *System 44*?

3. What additional *System 44* training or support would have been helpful?

Implementation of System 44 Components

4. How frequently did you use each of the following System 44 components?

	Rarely or never		Once a week		Every day
a. Whole class instruction in *System 44*	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
b. Teaching Guide (bound copy)	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
c. Teaching Guide (computer version)	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
d. 44 Book or Decodable Digest (computer version)	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
e. SAM reports	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
f. Small group instruction: SMART lessons	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
g. Individual student support (outside of small group)	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$

5. How frequently did you supplement your *System 44* instruction with the following materials?

	Rarely or never		Once a week		Every day
a. SAM practice pages	□1	□2	□3	□4	□5
b. SAM book expert (identify appropriate books)	□1	□2	□3	□4	□5
c. Flip chart	□1	□2	□3	□4	□5
d. Letter manipulatives	□1	□2	□3	□4	□5
e. *System 44* audiobooks	□1	□2	□3	□4	□5
f. Reading Counts! quizzes	□1	□2	□3	□4	□5
g. Sound and Articulation DVD	□1	□2	□3	□4	□5
h. Conference Guides (for 44 Library books)	□1	□2	□3	□4	□5
i. Scholastic Red routines	□1	□2	□3	□4	□5
j. Other materials that were not *System 44*	□1	□2	□3	□4	□5

6. On average, how many minutes did each student use *System 44* on the computer each day?

_____

How many computers were available in your classroom for *System 44* instruction? _____

Instructional Practices

7. Please indicate which of the following teaching strategies and materials you used **with your struggling readers** this year (2010–2011). *Mark (X) only one box per row.*

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction
Instruction			
a. Provide time in reading block for students to practice skills on their own.	□1	□2	□3
b. Provide materials for at-home practice of skills introduced in class.	□1	□2	□3
c. Provide extra reading instructional time for struggling readers.	□1	□2	□3
d. Include writing opportunities in reading instruction.	□1	□2	□3
e. Build spelling practice into reading instruction.	□1	□2	□3
f. Develop reading skills using science and social studies texts.	□1	□2	□3

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction

Grouping

g. Teach whole class reading lessons. ☐₁ ☐₂ ☐₃

h. Work one-to-one with students on reading. ☐₁ ☐₂ ☐₃

i. Work with small groups of students. ☐₁ ☐₂ ☐₃

j. Group students based on skill levels. ☐₁ ☐₂ ☐₃

k. Group students based on need for additional instruction in specific, targeted skills. ☐₁ ☐₂ ☐₃

l. Group students based on mixed abilities (pairs or cooperative groups). ☐₁ ☐₂ ☐₃

Reading Materials

m. Use core reading series. ☐₁ ☐₂ ☐₃

n. Use supplementary reading materials. ☐₁ ☐₂ ☐₃

o. Use trade books. ☐₁ ☐₂ ☐₃

p. Use books that are easy to decode. ☐₁ ☐₂ ☐₃

q. Use separate intervention materials for some students. ☐₁ ☐₂ ☐₃

r. Use reading software/technology. ☐₁ ☐₂ ☐₃

s. Use teacher-made materials. ☐₁ ☐₂ ☐₃

Assessments

t. Use test results to organize instructional groups. ☐₁ ☐₂ ☐₃

u. Use informal reading inventories. ☐₁ ☐₂ ☐₃

v. Conduct miscue analysis, analyzing errors students make while reading aloud. ☐₁ ☐₂ ☐₃

w. Use tests to determine progress on skills. ☐₁ ☐₂ ☐₃

x. Use diagnostic tests to identify students who need reading intervention services. ☐₁ ☐₂ ☐₃

8. Please indicate which of the following reading instructional activities you used **with your struggling readers** <u>this year (2010–2011)</u>. *Mark (X) only one box per row.*

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction
Reading Text			
a. Students reread familiar text.	☐1	☐2	☐3
b. Students confirm or revise predictions after reading.	☐1	☐2	☐3
c. Students generate their own questions about text material.	☐1	☐2	☐3
d. Students identify their comprehension break-downs and use fix-up strategies with a partner.	☐1	☐2	☐3
e. Students orally summarize main events in stories and informational texts.	☐1	☐2	☐3
f. Students use graphic and semantic organizers to track information.	☐1	☐2	☐3
Work With Sounds and Words			
g. I teach specific strategies for decoding unfamiliar words.	☐1	☐2	☐3
h. I teach decoding/phonics skills while reading stories.	☐1	☐2	☐3
i. Students practice reading high frequency words for automaticity.	☐1	☐2	☐3
j. Students use knowledge of root words, prefixes, and suffixes to decode new words.	☐1	☐2	☐3
k. Students work with prefixes and suffixes to change the meaning of words.	☐1	☐2	☐3
l. Students use context clues to identify unknown words.	☐1	☐2	☐3
m. I discuss new and unusual words before reading.	☐1	☐2	☐3
Other Techniques			
n. Students answer questions in writing after reading stories.	☐1	☐2	☐3
o. Students select books from the library for independent reading.	☐1	☐2	☐3
p. Students are given time to read on their own for enjoyment.	☐1	☐2	☐3

9. Please rate the extent to which you agree or disagree with the following statements. *Mark (X) only one box per row.*

My *System 44* students this year received enough instruction and practice in the following areas to make sufficient gains in reading.	Strongly disagree				Strongly agree
a. phonemic awareness	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
b. phonics	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
c. fluency	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
d. vocabulary	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
e. comprehension	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$

System 44 Concepts

The following questions are intended to capture your current understanding of the System 44 program based on either experience with the program or what you learned in the training. This information will help us to understand areas that the training did or did not address, and will help guide future training sessions.

10. Which of the following is NOT a skill that is measured by the Scholastic Phonics Inventory? *Mark (X) only one box.*

$\square_1$ Identify sight words

$\square_2$ Recognize letter names

$\square_3$ Identify nonsense words

$\square_4$ Improve phonological awareness

11. Which of the following *System 44* program components is designed to provide students with written practice in applying the skills they are learning in the software? *Mark (X) all that apply.*

$\square_a$ Decodable Digest

$\square_b$ 44Book

$\square_c$ Flip chart

$\square_d$ SAM Practice Pages

12. Which of the following *System 44* program components is designed to provide reading fluency practice for students? *Mark (X) all that apply.*

☐a   Decodable Digest

☐b   *System 44* Library Books

☐c   *System 44* Audiobooks

☐d   Success Strand

13. Scholastic Reading Counts! is . . . *Mark (X) only one box.*

☐1   the *System 44* adaptive software that continuously collects data on student performance.

☐2   a set of quizzes that measure comprehension of each *System 44* paperback book.

☐3   a set of progress monitoring tools given at the end of each *System 44* series.

☐4   a set of motivational videos that students can play when they have successfully completed a *System 44* series of lessons.

14. Which of the following is NOT a feature of *System 44*? *Mark (X) only one box.*

☐1   Using SAM reports for instructional grouping

☐2   Teacher-led instruction in small groups

☐3   Library books that reinforce specific phonics skills

☐4   Successful completion of every software lesson

15. Phonemic awareness is . . . *Mark (X) all that apply.*

☐a   the foundation for phonics instruction.

☐b   the ability to hear and manipulate individual sounds in spoken words.

☐c   the same as phonological awareness.

☐d   the recognition that sentences consist of separate words.

16. The Scholastic Achievement Manager (SAM) can . . . *Mark (X) all that apply.*

☐a   help teachers form instructional groups for students who need work on the same skills.

☐b   provide detailed, diagnostic information about student strengths and weaknesses.

☐c   allow the teacher to monitor students' ongoing progress on the software.

☐d   provide downloadable assessments for various reading skills.

17.   Select the description from the right column that matches each of the four *System 44* Zones listed on the left and enter the matched number in the box:

a.   Fluency Zone   [   ]

1   Explicit instruction in the 44 sounds of the English language and the letters that make each sound

b.   Spelling Zone   [   ]

2   Reading of decodable text with a focus on comprehension

c.   Word Zone   [   ]

3   Instruction and practice in specific spelling rules

d.   Smart Zone   [   ]

4   Modeling and practice in blending sounds

18.   Select the description from the right column that matches each of the four *System 44* strands of instruction listed on the left and enter the matched number in the box:

a.   Success   [   ]

1   Builds automatic recognition of high frequency words

b.   Word Strategies   [   ]

2   Read passages to build on skills and improve comprehension

c.   The Code   [   ]

3   Practice in syllable strategies and word analysis

d.   Sight Words   [   ]

4   Direct instruction and practice in letter-sound correspondences

19.   Please rate the extent to which you agree or disagree with the following statements regarding the *System 44* program. *Mark (X) only one box per row.*

I understand . . .	Strongly disagree				Strongly agree
a. how the *System 44* software works to individualize instruction and practice for students.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
b. what to do during small group instruction.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
c. how to use SAM to group students for small group instruction.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
d. when to use the Decodable Digest, 44Book, and *System 44* library books for student practice.	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$
e. how to monitor student progress in *System 44.*	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$

20.   Some comments I have about *System 44* are . . .

Teacher Survey

Murrieta Valley Unified School District

April 2011

About This Survey

This survey contains questions about your background and questions about your reading instruction this school year. Your responses are important in helping us learn more about reading instruction in your district.

Please write your answers directly on the survey by checking the appropriate boxes or by writing your response in the space provided. Your individual responses will be kept confidential and will not be shared with your principal or other school or district personnel. Summary data from this survey will be shared with Scholastic staff as part of a *System 44* study that is taking place in your district.

We expect it will take approximately 15 minutes to complete the survey. Please return the survey and accompanying consent form to us in the self-addressed stamped envelope we provided. Upon receipt of this survey, we will email you a $25 gift certificate to the Scholastic Teacher Store.

Thank you very much for your help.

Teacher Background

1. Are you female or male?

    ☐₁ Female

    ☐₂ Male

2. How many years have you worked as a full-time teacher in public schools*? Write in the number of years below. Count part of a year as one year.*

	Number of years
a. Total number of years as a teacher (do not include student teaching)	_____
b. Total number of years as a teacher in Murrieta Unified School District	_____
c. Total number of years as a teacher at your current school	_____

3. What is the *highest* degree you have obtained as of September 2010? *Mark (X) only one box.*

    ☐₁ Bachelor's (B.A., B.S., B.E., etc.)

    ☐₂ Master's degree (M.A., M.A.T., M.B.A., M.Ed., M.S., etc.)

    ☐₃ Education specialist or certification at least one year beyond master's level

    ☐₄ Doctorate or professional degree (Ph.D., Ed.D., M.D., L.L.B., J.D., D.D.S.)

    ☐₅ Other (please specify: _____)

4. Which of the following describes the teaching certificate(s) you currently hold in California? *Mark (X) all that apply.*

    ☐ₐ Single subject   ☐_f Reading Specialist

    ☐_b Multiple subject   ☐_g Administrative Services

    ☐_c Preliminary   ☐_h District Intern

    ☐_d Professional Clear   ☐_i CLAD or BCLAD (Bilingual, Crosscultural, Language and Academic Development)

    ☐_e Education Specialist Instruction

5. I have used *System 44* in my classroom.

    ☐₁ Yes   ☐₂ No

6. I have used *Read 180* in my classroom.

    ☐₁ Yes   ☐₂ No

Professional Development

7. Have you had training or support in *System 44* (e.g., in-classroom coaching, group training) provided by a Scholastic representative or other experienced *System 44*? *Mark (X) all that apply.*

☐a Have not received any training in *System 44*

☐b Attended a *System 44* training

☐c Received other support for *System 44* from a Scholastic representative

☐d Received other support from another experienced *System 44* user

☐e Other (please specify: _____)

Instructional Practices

8. Please indicate which of the following teaching strategies and materials you used **with your struggling readers** this year (2010–2011). *Mark (X) only one box per row.*

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction
Instruction			
a. Provide time in reading block for students to practice skills on their own.	☐1	☐2	☐3
b. Provide materials for at-home practice of skills introduced in class.	☐1	☐2	☐3
c. Provide extra reading instructional time for struggling readers.	☐1	☐2	☐3
d. Include writing opportunities in reading instruction.	☐1	☐2	☐3
e. Build spelling practice into reading instruction.	☐1	☐2	☐3
f. Develop reading skills using science and social studies texts.	☐1	☐2	☐3
Grouping			
g. Teach whole class reading lessons.	☐1	☐2	☐3
h. Work one-to-one with students on reading.	☐1	☐2	☐3
i. Work with small groups of students.	☐1	☐2	☐3
j. Group students based on skill levels.	☐1	☐2	☐3
k. Group students based on need for additional instruction in specific, targeted skills.	☐1	☐2	☐3
l. Group students based on mixed abilities (pairs or cooperative groups).	☐1	☐2	☐3

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction

Reading Materials

m. Use core reading series.   □₁   □₂   □₃

n. Use supplementary reading materials.   □₁   □₂   □₃

o. Use trade books.   □₁   □₂   □₃

p. Use books that are easy to decode.   □₁   □₂   □₃

q. Use separate intervention materials for some students.   □₁   □₂   □₃

r. Use reading software/technology.   □₁   □₂   □₃

s. Use teacher-made materials.   □₁   □₂   □₃

Assessments

t. Use test results to organize instructional groups.   □₁   □₂   □₃

u. Use informal reading inventories.   □₁   □₂   □₃

v. Conduct miscue analysis, analyzing errors students make while reading aloud.   □₁   □₂   □₃

w. Use tests to determine progress on skills.   □₁   □₂   □₃

x. Use diagnostic tests to identify students who need reading intervention services.   □₁   □₂   □₃

9. Please indicate which of the following reading instructional activities you used **with your struggling readers** this year (2010–2011). *Mark (X) only one box per row.*

	Central to my reading instruction	Small part of my reading instruction	Not part of my reading instruction
Reading Text			
a. Students reread familiar text.	☐1	☐2	☐3
b. Students confirm or revise predictions after reading.	☐1	☐2	☐3
c. Students generate their own questions about text material.	☐1	☐2	☐3
d. Students identify their comprehension break-downs and use fix-up strategies with a partner.	☐1	☐2	☐3
e. Students orally summarize main events in stories and informational texts.	☐1	☐2	☐3
f. Students use graphic and semantic organizers to track information.	☐1	☐2	☐3
Work With Sounds and Words			
g. I teach specific strategies for decoding unfamiliar words.	☐1	☐2	☐3
h. I teach decoding/phonics skills while reading stories.	☐1	☐2	☐3
i. Students practice reading high frequency words for automaticity.	☐1	☐2	☐3
j. Students use knowledge of root words, prefixes, and suffixes to decode new words.	☐1	☐2	☐3
k. Students work with prefixes and suffixes to change the meaning of words.	☐1	☐2	☐3
l. Students use context clues to identify unknown words.	☐1	☐2	☐3
m. I discuss new and unusual words before reading.	☐1	☐2	☐3
Other Techniques			
n. Students answer questions in writing after reading stories.	☐1	☐2	☐3
o. Students select books from the library for independent reading.	☐1	☐2	☐3
p. Students are given time to read on their own for enjoyment.	☐1	☐2	☐3

10. What reading instructional program(s) did you use this year with your struggling readers?
Mark (X) all that apply.

- ☐_a Houghton-Mifflin
- ☐_b Morphographs
- ☐_c Ticket to Read
- ☐_d Read Naturally
- ☐_e SRA Decoding
- ☐_f Voyager

- ☐_g REACH
- ☐_h Explode the Code
- ☐_i Rosetta Stone
- ☐_j Language!
- ☐_k Other _____
- ☐_l Other _____

11. Please rate the extent to which you agree or disagree with the following statements. *Mark (X) only one box per row.*

My struggling students this year have received enough instruction and practice in the following areas to make sufficient gains in reading.	Strongly disagree				Strongly agree
a. phonemic awareness	☐1	☐2	☐3	☐4	☐5
b. phonics	☐1	☐2	☐3	☐4	☐5
c. fluency	☐1	☐2	☐3	☐4	☐5
d. vocabulary	☐1	☐2	☐3	☐4	☐5
e. comprehension	☐1	☐2	☐3	☐4	☐5

Thank you!

System 44
Murrieta Unified School District
Classroom Visit

School:
- ☐₁ Alta Murrieta
- ☐₂ Avaxat
- ☐₃ Buchanan
- ☐₄ Curran

- ☐₅ Monte Vista
- ☐₆ Murrieta
- ☐₇ Rail Ranch

- ☐₈ Shivela
- ☐₉ Thompson
- ☐₁₀ McElhinney
- ☐₁₁ Warm Springs

Prepared by:
RMC Research Corporation
111 SW Columbia Street
Suite 1200
Portland, OR 97201

	Fall 2010	Winter 2011	Spring 2011

Date: _____   Class Visit #:   1   2   3

Number of Students in Class During Visit: _____   **Teacher Name:** _____

Observer: _____   **System 44 start time:** _____   **System 44 end time:** _____   **Total minutes:** _____

Grade Levels Represented: ☐₁ 4th ☐₂ 5th ☐₃ 6th ☐₄ 7th ☐₅ 8th

Class Type: ☐₁ Special Day Class   ☐₂ Pullout Class   ☐₃ Replacement ELA Class (*Mark all that apply.*)

Number of Computers Available for System 44: _____

Number of Other Adults in Class: _____   **Role/Activity of Other Adult(s):** _____

_____

Teaching or organizational strategies used:

Notes:

Interval start time: _____ **Interval end time:** _____ **Total minutes:** _____   *System 44* **Classroom Visit Protocol**

❏ Check here if no whole class activity takes place on date of observation   ❏ Check here if whole class activity takes place at end of class

<table>
<tr>
<th colspan="3">Teacher-Led Activity
<i>What is the teacher doing, and how fully is the teacher implementing each activity?</i></th>
<th colspan="3">Teacher-Led Support
<i>What supports is the teacher using,
and how fully[2] is the teacher using them?</i></th>
</tr>
<tr>
<td rowspan="10">Whole Class/Large Group
(_____ students)</td>
<td colspan="2">❏_a Teaching Guide[1]</td>
<td>❏_b Letter manipulatives</td>
<td>⓪①②</td>
</tr>
<tr>
<td>• Introducing</td>
<td>⓪①②</td>
<td>❏_c Flip chart</td>
<td>⓪①②</td>
</tr>
<tr>
<td>• Teaching/modeling</td>
<td>⓪①②</td>
<td>❏_d 44 Book</td>
<td>⓪①②</td>
</tr>
<tr>
<td>• Engaging students in guided practice</td>
<td>⓪①②</td>
<td>❏_e Decodable Digest</td>
<td>⓪①②</td>
</tr>
<tr>
<td>• Apply and reinforcing/reviewing</td>
<td>⓪①②</td>
<td>❏_f Teaching Resources for the System 44 Library</td>
<td>⓪①②</td>
</tr>
<tr>
<td colspan="2" rowspan="5"><i>Notes.</i>
[1] The "I Do, We Do, You Do" components should be incorporated for full implementation.

[2] Full use of supports involves modeling answers and guiding student usage of lessons; monitoring student work; and providing verbal or written feedback. If a teacher assigns an activity using a material but does not provide any guidance, monitoring, or feedback, mark 0.</td>
<td>❏_g <i>System 44</i> paperback books</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_h SAM Resources/Worksheets</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_i Sound and articulation DVD</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_j SAM Data Reports (List_____)</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_k Non-<i>System 44</i> materials</td>
<td>⓪①②</td>
</tr>
</table>

3-point scale (0 = None, 1 = Partially, 2 = Fully)

<table>
<tr>
<th colspan="2">Independent (Individual/Paired) Activity
<i>What are individual students or pairs
doing during large group instruction?</i> Mark all that apply.</th>
<th colspan="3">Independent (Individual/Paired) Student Support
<i>What supports are the students using,
and how engaged[3] are students in their use of them?</i></th>
</tr>
<tr>
<td rowspan="7">Individual/Pairs
(_____ students)</td>
<td>❏_a Writing activity using <i>System 44</i> materials</td>
<td>❏_a <i>System 44</i> audiobooks</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_b Reading activity using <i>System 44</i> materials</td>
<td>❏_b 44 Book</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_c Other practice activity using <i>System 44</i> materials</td>
<td>❏_c Decodable Digest</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_d Self monitoring using progress check document, reading logs, Reading Counts quizzes, etc.</td>
<td>❏_d SAM Resources/Worksheets</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_e Non-<i>System 44</i> instructional activity</td>
<td>❏_e <i>System 44</i> paperback books (without audio)</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td>❏_f Non-instructional activity</td>
<td>❏_f Letter manipulatives</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
<tr>
<td></td>
<td>❏_g Sound and articulation DVD</td>
<td># Ss _____</td>
<td>⓪①②</td>
</tr>
</table>

[3] Student engagement: (0 = Not at all engaged/none engaged, 1 = Partially engaged/some engaged, 2 = Fully engaged/all engaged).

Interval start time: _____ **Interval end time:** _____ **Total minutes:** _____ *System 44* **Classroom Visit Protocol**

Teacher-Led Activity			Teacher-Led Support		
What is the teacher doing, and how fully is the teacher implementing each activity?			*What supports is the teacher using, and how fully[2] is the teacher using them?*		
☐a Teaching Guide[1]			☐b Decodable Digest		⓪①②
• Introducing	⓪①②		☐c 44 Book		⓪①②
• Teaching/modeling	⓪①②		☐d Teaching Resources for the System 44 Library		⓪①②
• Engaging students in guided practice	⓪①②		☐e Letter manipulatives		⓪①②
• Apply and reinforcing/reviewing	⓪①②		☐f Flip chart		⓪①②
Notes. [1] The "I Do, We Do, You Do" components should be incorporated for full implementation. [2] Full use of supports involves modeling answers and guiding student usage of lessons; monitoring student work; and providing verbal or written feedback. If a teacher assigns an activity using a material but does not provide any guidance, monitoring, or feedback, mark 0.			☐g Sound and articulation DVD		⓪①②
			☐h SAM Resources/Worksheets		⓪①②
			☐i *System 44* paperback books		⓪①②
			☐j SAM Data: Reading Progress Report		⓪①②
			☐k SAM Data: Differentiated Instruction Grouping Report		⓪①②
☐m Non-*System 44* materials			☐l SAM Data: Response to Intervention Report		⓪①②

Small Group (____ students) (____ # minutes: ____)

3-point scale (0 = None, 1 = Partially, 2 = Fully)

System 44 computer software	How engaged are students in their use of the software?
System 44 computer software (_____ students)	⓪ Not at all engaged/none engaged ① Partially engaged/some engaged ② Fully engaged/all engaged

Independent (Individual/Paired) Activity		Independent (Individual/Paired) Student Support		
What are individual students or pairs doing during large group instruction? Mark all that apply.		*What supports are the students using, and how engaged[3] are students in their use of them?*		
☐a Writing activity using *System 44* materials		☐a *System 44* audiobooks	# Ss _____	⓪①②
☐b Reading activity using *System 44* materials		☐b 44 Book	# Ss _____	⓪①②
☐c Other practice activity using *System 44* materials		☐c Decodable Digest	# Ss _____	⓪①②
☐d Self monitoring using progress check document, reading logs, Reading Counts quizzes, etc.		☐d SAM Resources/Worksheets	# Ss _____	⓪①②
☐e Non-*System 44* instructional activity		☐e *System 44* paperback books (without audio)	# Ss _____	⓪①②
☐f Non-instructional activity		☐f Letter manipulatives	# Ss _____	⓪①②
		☐g Sound and articulation DVD	# Ss _____	⓪①②

Individual/Pairs (____ students)

[3] Student engagement: (0 = Not at all engaged/none engaged, 1 = Partially engaged/some engaged, 2 = Fully engaged/all engaged).

2

Interval start time: _____ **Interval end time:** _____ **Total minutes:** _____   *System 44* **Classroom Visit Protocol**

Teacher-Led Activity			Teacher-Led Support		
What is the teacher doing, and how fully is the teacher implementing each activity?			*What supports is the teacher using, and how fully[2] is the teacher using them?*		
☐a Teaching Guide[1]			☐b Decodable Digest		⓪①②
• Introducing	⓪①②		☐c 44 Book		⓪①②
• Teaching/modeling	⓪①②		☐d Teaching Resources for the *System 44* Library		⓪①②
• Engaging students in guided practice	⓪①②		☐e Letter manipulatives		⓪①②
• Apply and reinforcing/reviewing	⓪①②		☐f Flip chart		⓪①②
Notes.			☐g Sound and articulation DVD		⓪①②
[1] The "I Do, We Do, You Do" components should be incorporated for full implementation.			☐h SAM Resources/Worksheets		⓪①②
			☐i *System 44* paperback books		⓪①②
[2] Full use of supports involves modeling answers and guiding student usage of lessons; monitoring student work; and providing verbal or written feedback. If a teacher assigns an activity using a material but does not provide any guidance, monitoring, or feedback, mark 0.			☐j SAM Data: Reading Progress Report		⓪①②
			☐k SAM Data: Differentiated Instruction Grouping Report		⓪①②
☐m Non-*System 44* materials			☐l SAM Data: Response to Intervention Report		⓪①②

(Left side labeled: Small Group (_____ students) (_____ # minutes:))

3-point scale (0 = None, 1 = Partially, 2 = Fully)

System 44 computer software	How engaged are students in their use of the software?
System 44 computer software (_____ students)	⓪ Not at all engaged/none engaged ① Partially engaged/some engaged ② Fully engaged/all engaged

Independent (Individual/Paired) Activity		Independent (Individual/Paired) Student Support		
What are individual students or pairs doing during large group instruction? Mark all that apply.		*What supports are the students using, and how engaged[3] are students in their use of them?*		
☐a Writing activity using *System 44* materials		☐a *System 44* audiobooks	# Ss _____	⓪①②
☐b Reading activity using *System 44* materials		☐b 44 Book	# Ss _____	⓪①②
☐c Other practice activity using *System 44* materials		☐c Decodable Digest	# Ss _____	⓪①②
☐d Self monitoring using progress check document, reading logs, Reading Counts quizzes, etc.		☐d SAM Resources/Worksheets	# Ss _____	⓪①②
☐e Non-*System 44* instructional activity		☐e *System 44* paperback books (without audio)	# Ss _____	⓪①②
☐f Non-instructional activity		☐f Letter manipulatives	# Ss _____	⓪①②
		☐g Sound and articulation DVD	# Ss _____	⓪①②

(Left side labeled: Individual/Pairs (_____ students))

[3] Student engagement: (0 = Not at all engaged/none engaged, 1 = Partially engaged/some engaged, 2 = Fully engaged/all engaged).

Interval start time: _____ **Interval end time:** _____ **Total minutes:** _____ *System 44* **Classroom Visit Protocol**

Teacher-Led Activity			Teacher-Led Support	
What is the teacher doing, and how fully is the teacher implementing each activity?			*What supports is the teacher using, and how fully[2] is the teacher using them?*	
□a Teaching Guide[1]			□b Decodable Digest	⓪①②
• Introducing	⓪①②		□c 44 Book	⓪①②
• Teaching/modeling	⓪①②		□d Teaching Resources for the System 44 Library	⓪①②
• Engaging students in guided practice	⓪①②		□e Letter manipulatives	⓪①②
• Apply and reinforcing/reviewing	⓪①②		□f Flip chart	⓪①②
Notes. [1] The "I Do, We Do, You Do" components should be incorporated for full implementation. [2] Full use of supports involves modeling answers and guiding student usage of lessons; monitoring student work; and providing verbal or written feedback. If a teacher assigns an activity using a material but does not provide any guidance, monitoring, or feedback, mark 0.			□g Sound and articulation DVD	⓪①②
			□h SAM Resources/Worksheets	⓪①②
			□i *System 44* paperback books	⓪①②
			□j SAM Data: Reading Progress Report	⓪①②
			□k SAM Data: Differentiated Instruction Grouping Report	⓪①②
□m Non-*System 44* materials			□l SAM Data: Response to Intervention Report	⓪①②

Small Group (# minutes: _____) (_____ students)

3-point scale (0 = None, 1 = Partially, 2 = Fully)

System 44 computer software	How engaged are students in their use of the software?
System 44 computer software (_____ students)	⓪ Not at all engaged/none engaged ① Partially engaged/some engaged ② Fully engaged/all engaged

Independent (Individual/Paired) Activity		Independent (Individual/Paired) Student Support		
What are individual students or pairs doing during large group instruction? Mark all that apply.		*What supports are the students using, and how engaged[3] are students in their use of them?*		
□a Writing activity using *System 44* materials		□a *System 44* audiobooks	# Ss _____	⓪①②
□b Reading activity using *System 44* materials		□b 44 Book	# Ss _____	⓪①②
□c Other practice activity using *System 44* materials		□c Decodable Digest	# Ss _____	⓪①②
□d Self monitoring using progress check document, reading logs, Reading Counts quizzes, etc.		□d SAM Resources/Worksheets	# Ss _____	⓪①②
□e Non-*System 44* instructional activity		□e *System 44* paperback books (without audio)	# Ss _____	⓪①②
□f Non-instructional activity		□f Letter manipulatives	# Ss _____	⓪①②
		□g Sound and articulation DVD	# Ss _____	⓪①②

Individual/Pairs (_____ students)

[3] Student engagement: (0 = Not at all engaged/none engaged, 1 = Partially engaged/some engaged, 2 = Fully engaged/all engaged).

Overall *Did the teacher:*		Notes
OVERVIEW	**[1]** Maintain an appropriate pace? ⓪①②③	
	[2] Deliver lessons appropriate for the skill levels of the students? ⓪①②③	
	[3] Appear well prepared for the lesson? ⓪①②③	
	[4] Actively tries to engage students throughout the lesson? ⓪①②③	
	[5] Maintain a positive learning environment (e.g., limited interruption, good classroom management)? ⓪①②③	
	[6] Execute the lesson well? ⓪①②③	
	[7] Monitor students? (Check for on-task behavior, understanding; provide feedback) ⓪①②③	
	[8] Keep students on task? ⓪①②③	
	[9] Ensure smooth and efficient transitions between rotations (e.g., use of timer or clock, evidence of transition routines, rituals for students putting materials away). ⓪①②③	
	[10] Use flexible groupings for students (using SAM data, anecdotal evidence) or regroup students based on instructional needs? ⓪①②③	
	[11 Differentiate support based on students' needs (e.g., provided individualized instruction, used ELL or SPED sections of teaching guide) ⓪①②③	

4-point scale (0 = Not at all, 1 = To a small extent, 2 = To a moderate extent, 3 = Definitely)

System 44 Classroom Setup		Notes
CLASS ROOM	Computers (for 1/3 of class) are accessible and functioning ⓪①②	
	Auxiliary equipment (headsets, microphones, CD players) are accessible and functioning ⓪①②	
	System 44 materials are easily accessible to students and teacher ⓪①②	

3-point scale (0 = None, 1= Some, 2 = All)

System 44
Teacher Interview
Spring 2011

Thank you for taking the time to talk with me today. As you know, RMC Research is evaluating the implementation of the System 44 program in your school district this year. We are talking with teachers who implemented the program to help us understand factors that may have contributed to or hindered the success of the program. Your responses will be kept confidential and will not be shared with your principal or other district personnel. Your answers will be combined with other teachers' information so that no one can know about any one person's responses.

Do you have any questions before we begin?

1. Had you taught System 44 before this school year?

    ❏ yes   ❏ no

    If yes, how many years have you used the program?   _____

2. What features of the *System 44* program do you like best?

3. What aspects of *System 44* implementation do you think you struggled with the most this year? How did you address or resolve the challenge(s)?

4. How did you decide how to group students on any given day (e.g., which students would use the computer first)?

5.	How frequently did you use whole group instruction? (If once a week or more: what did you typically focus on during whole group instruction?) (If less than once a week: why did you not use whole group instruction more frequently?)

6.	In what ways, if any, did you use SAM reports? Which reports did you use, and how frequently did you use them? Prompt: (Show report examples)

   a.	Screening and Placement;

   b.	Software Performance;

   c.	Reading Progress;

   d.	Response to Intervention;

   e.	Differentiated Instruction Grouping;

   f.	Student Mastery

7.	What technology issues did you experience beyond the start-up period? Did these issues get in the way of implementing the program?

8.	Did you experience any issues with scheduling students to participate in *System 44*? If so, please explain whether these issues resolved during the school year.

9.	If you had the opportunity to make recommendations to teachers in another school that is planning to implement *System 44* for the first time next year, what advice would you give them?

System 44
Principal Interview
Spring 2011

As part of the evaluation of the Scholastic System 44 program, we want to talk with administrators at each participating school to learn more about the context in which System 44 was implemented as well as factors that facilitated or hindered implementation of the program.

1.   In what year did your school first implement the System 44 reading program?

    ❒ 2010–2011
    ❒ _____

2.   In what year did your school first implement the Scholastic Read 180 reading program?

    ❒ 2010–2011
    ❒ _____

3.   Have you had an opportunity to observe *System 44* classes at your school? If yes, what features of the program do you think contribute to student success?

4.   What other programs or services are available to students in your school who are struggling with reading? (Prompts: in-class programs, pull-out programs, after school programs or tutoring)

5.   What factors do you think have facilitated implementation of *System 44*? (Prompts: district staff support, Scholastic staff support, teacher interest, student interest, computer-delivered instruction, teacher-delivered instruction, books and other materials)

6. What factors have hindered implementation of *System 44*? (Prompts: hardware issues, software issues, problems with other materials such as books, testing to identify the right students, testing for treatment and control group students, pullout from other subjects, research requirement for random assignment, problems at Thompson and Curran)

7. What feedback have you received from teachers or parents about student outcomes resulting from participation in *System 44*?)

8. What feedback have you received from teachers about the training or support they received from Scholastic for implementing the program?

9. What plans does your school have for continuing *System 44* next year? (Prompts: Do you plan to do anything differently as far as implementation or scheduling?)

10. Do you have any suggestions for how the evaluation might have been better implemented? (e.g., identifying students, random assignment, SPI and SRI testing, individual testing of treatment and control group students).

11. Are there any other comments you would like to make?

System 44
District Staff Focus Group
Spring 2011

As part of the evaluation of the Scholastic System 44 program, we want to talk with district staff involved in implementing the program to learn more about the context in which System 44 was implemented as well as factors that facilitated or hindered implementation of the program.

System 44 Implementation

1. What types of professional development did *System 44* teachers receive this year?

    What did you or the *System 44* teachers find most useful about the professional development they received?

    What suggestions, if any, do you have regarding professional development?

2. What factors do you think facilitated implementation of *System 44* in the 11 study schools this year?

3. What factors do you think hindered implementation (i.e., what challenges did schools face in implementing *System 44* in their classrooms)?

4.   What recommendations would you have for another district that is starting to use the *System 44* program in their schools (i.e., what were the lessons learned)?

5.   Overall, what impact do you think the program has had on students? What aspects of the program do you believe have had the greatest impact on students?

Evaluation Implementation

6.   What questions would you be interested in having answered by the evaluation of System 44 in your district?

7.   What recommendations would you make concerning the evaluation component of the *System 44* study (i.e., what were the lessons learned)?

8.   What was the process for administering the SPI and SRI tests in Fall and Winter (i.e., who was responsible for administering them, how long did the process take)?

9.   Is there anything else that you would like to add?

Appendix B
Description of the Counterfactual

Exhibit B1
Summary of Reading and Language Arts Interventions in
Control Group Elementary Schools

School Name	# of Control Group Students in School	Control Classroom Number	# of Control Group Students in Class	Class Structure	Reading Interventions Used in Class
Alta Murrieta	4	1	4	Small group direct instruction	SRA Decoding/spelling through Morphographs
Avaxat	14	2	10	Pullout	Voyager-Passport
		3	2	Core class	High Group/HM
		4	2	Core class	Middle Group/HM
Buchanan	16	5	2	Self-contained	Ticket to Read, Read Naturally
		6	3	Self-contained	Ticket to Read, Read Naturally
		7	3	Self-contained	Ticket to Read, Read Naturally
		8	1	Self-contained	Ticket to Read, Read Naturally
		9	2	Self-contained	Ticket to Read, Read Naturally
		10	1	Team teaching	Ticket to Read, Read Naturally
		11	2	Team teaching	Ticket to Read, Read Naturally
		12	2	Team teaching	Ticket to Read, Read Naturally
Curran	7	13	2	Pullout	Voyager-Passport
		14	2	Special Day Class	SRA Decoded Reading
		15	3	Pullout	Voyager-Passport
Monte Vista	30	16	5		Voyager-Passport
		17	6		Voyager-Passport
		18	4		Voyager-Passport
		19	5		Voyager-Passport
		20	2		Voyager-Passport
		21	3		Voyager-Passport
		22	2		Voyager-Passport
		23	2		Voyager-Passport
Murrieta	14	24	3		
		25	8		
		26	1		
		27	1		
		28	1		
		29	ALL		
Rail Ranch	16	30	16	Pullout	REACH

Note. HM = Houghton-Mifflin.

Exhibit B2
Summary of Reading and Language Arts Interventions in
Control Group Middle Schools

School	# of Control Group Students in School	Control Classroom Number	# of Control Group Students in Class	Class Structure	Reading Interventions Used in Class
Shivela	28	31	11	Core replacement	Voyager-Journeys
		32	4	Core replacement	Voyager-Passport (all SDC students)
		33	2	SDC	Voyager-Journeys
		34	7	General LA	Core-HM
		35	2	Core replacement	*Read 180* (opted out)
Thompson	20	36	1	General LA	Core-HM
		37	7	SDC LA	Voyager-Journeys (modified)
		38	1	General LA	Core-HM
		39	2	STRATEGIC LA	Support class with modified curriculum and small class size
		40	1	General LA	Core-HM
		41	1	General LA	Core-HM
		42	1	General LA	Core-HM
		43	1	General LA	Core-HM
		44	3	General LA	Core-HM
		45	1	General LA	Core-HM
		46	1	General LA	Core-HM
		47	1	General LA	Core-HM
McElhinney	10	48	6	General LA	Core-HM
		49	1	SDC	Voyager-Journeys
		50	1	SDC	Voyager-Journeys
Warm Springs	17	51	6	RSP-extra class	Explode the Code, Language!
		52	1	Replacement class	Rosetta Stone, Explode the Code
		53	4	SDC	Voyager-Journeys, Language!
		54	1	SDC behavior	Worksheets (various)
		55	5	General LA	Core-HM

Note. SDC = Special Day Class, GEN LA = General Language Arts, HM = Houghton-Mifflin, RSP = Resource Specialist Program.

Appendix C
Item Results for Instructional Practices

Exhibit C1
Percentage of Teachers Using Various Strategies With Struggling Readers

Instructional Strategy	System 44 Last Year (2009–2010)			System 44 This Year (2010–2011)			Control Teachers This Year (2010–2011)		
	Not Part	Small Part	Central	Not Part	Small Part	Central	Not Part	Small Part	Central
Instruction									
1. Provide time in reading block for students to practice skills on their own.	0	8	92	0	33	67	7	31	62
2. Provide materials for at-home practice of skills introduced in class.	17	33	50	42	33	25	16	31	53
3. Provide extra reading instructional time for struggling readers.	17	0	83	0	25	75	9	33	58
4. Include writing opportunities in reading instruction.	0	17	83	0	25	75	0	20	80
5. Build spelling practice into reading instruction.	0	67	33	8	58	33	13	36	51
6. Develop reading skills using science and social studies texts.	25	25	50	33	33	33	16	38	47
Grouping									
7. Teach whole class reading lessons.	0	42	58	0	67	33	0	31	69
8. Work one-to-one with students on reading.	0	58	42	0	25	75	16	42	42
9. Work with small groups of students.	0	0	100	0	17	83	13	27	60
10. Group students based on skill levels.	0	0	100	0	8	92	11	20	69
11. Group students based on need for additional instruction in specific, targeted skills.	0	25	75	0	17	83	11	29	60
12. Group students based on mixed abilities (pairs or cooperative groups).	25	42	33	9	45	45	9	43	48
Reading Materials									
13. Use core reading series.	8	17	75	25	17	58	9	11	80
14. Use supplementary reading materials.	0	42	58	27	45	27	11	50	39
15. Use trade books.	8	33	58	27	27	45	44	33	23
16. Use books that are easy to decode.	0	25	75	8	50	42	16	56	29
17. Use separate intervention materials for some students.	17	17	67	42	17	42	30	34	36
18. Use reading software/technology.	0	8	92	0	8	92	13	38	49
19. Use teacher-made materials.	0	58	42	17	58	25	9	51	40
Assessments									
20. Use test results to organize instructional groups.	0	17	83	0	25	75	11	24	64
21. Use informal reading inventories.	8	42	50	0	42	58	9	42	49
22. Conduct miscue analysis, analyzing errors students make while reading aloud.	8	42	50	25	17	58	18	40	42
23. Use tests to determine progress on skills.	0	8	92	8	33	58	4	27	69
24. Use diagnostic tests to identify students who need reading intervention services.	0	0	100	0	8	92	11	22	67

Exhibit C2
Percentage of Teachers Using Various Activities With Struggling Readers

Instructional Activity	System 44 Last Year (2009–10)			System 44 This Year (2010–11)			Control Teachers This Year (2010–11)		
	Not Part	Small Part	Central	Not Part	Small Part	Central	Not Part	Small Part	Central
Reading Text									
1. Students reread familiar text.	0	8	92	8	17	75	4	18	78
2. Students confirm or revise predictions after reading.	0	25	75	8	33	58	2	24	73
3. Students generate their own questions about text material.	0	42	58	8	50	42	7	47	47
4. Students identify their comprehension breakdowns and use fix-up strategies with a partner.	25	50	25	33	42	25	24	47	29
5. Students orally summarize main events in stories and informational texts.	8	33	58	8	17	75	4	13	82
6. Students use graphic and semantic organizers to track information.	0	17	83	0	42	58	0	36	64
Work With Sounds and Words									
7. I teach specific strategies for decoding unfamiliar words.	0	33	67	0	33	67	11	31	58
8. I teach decoding/phonics skills while reading stories.	0	25	75	0	25	75	13	27	60
9. Students practice reading high frequency words for automaticity.	8	50	42	8	50	42	24	42	33
10. Students use knowledge of root words, prefixes, and suffixes to decode new words.	0	42	58	0	42	58	2	27	71
11. Students work with prefixes and suffixes to change the meaning of words.	0	42	58	0	42	58	2	36	62
12. Students use context clues to identify unknown words.	0	8	92	0	8	92	0	11	89
13. I discuss new and unusual words before reading.	0	8	92	0	8	92	0	11	89
Other Techniques									
14. Students answer questions in writing after reading stories.	0	25	75	0	8	92	0	13	87
15. Students select books from the library for independent reading.	8	17	75	0	17	83	4	20	76
16. Students are given time to read on their own for enjoyment.	0	33	67	8	33	58	9	36	56

Appendix D
Fixed and Random Effects and Intraclass Correlations

Exhibit D1
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring TOSREC Scores

Level	Effect	Impact (β)	SE	DF	t	p
	Fixed Effects					
School	Intercept	31.97	0.96	10	33.38	.000
Student	*System 44*	-1.88	1.19	333	-1.58	.115
	Fall TOSREC Score	0.67	0.04	333	16.08	.000
	Sex	3.14	1.23	333	2.55	.011
	Caucasian	1.31	1.30	333	1.00	.317
	Special Education	-2.93	1.50	333	-1.94	.052
	Elementary school level	4.49	2.02	333	2.22	.027

Level	Variance Components	Variance	ICC
	Random Effects		
School	Level 2	5.64	
Student	Level 1	119.58	
	Random Effects (From Unconditional Model)[a]		
School	Level 2	53.49	.190
Student	Level 1	227.62	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D2
**Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring CTOPP Elision Scores**

Fixed Effects						
Level	**Effect**	**Impact (β)**	**SE**	**DF**	**t**	**p**
School	Intercept	23.63	0.57	10	41.12	.000
Student	*System 44*	0.54	0.49	337	1.09	.276
	Fall CTOPP Elision Score	0.58	0.04	337	14.37	.000
	Sex	-0.66	0.51	337	-1.29	.198
	Caucasian	0.46	0.54	337	0.84	.401
	Special Education	-1.33	0.62	337	-2.15	.032
	Elementary school level	1.10	1.20	337	0.92	.360

Random Effects		
Level	**Variance Components**	**Variance**
School	Level 2	2.78
Student	Level 1	20.79

Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	2.72	.069
Student	Level 1	36.62	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D3
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring Woodcock-Johnson III Word Identification Scores

	Fixed Effects					
Level	**Effect**	**Impact (β)**	**SE**	**DF**	**t**	**p**
School	Intercept	49.34	0.90	10	54.55	.000
Student	*System 44*	0.65	0.84	331	0.77	.442
	Fall Woodcock-Johnson III Word Identification Score	0.90	0.03	331	27.08	.000
	Sex	-0.90	0.86	331	-1.04	.299
	Caucasian	0.39	0.93	331	0.42	.677
	Special Education	-2.33	1.11	331	-2.10	.036
	Elementary school level	0.80	1.93	331	0.42	.677

	Random Effects	
Level	**Variance Components**	**Variance**
School	Level 2	6.62
Student	Level 1	59.34

Random Effects (From Unconditional Model)[a]

Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	70.99	.237
Student	Level 1	228.25	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D4
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring Woodcock-Johnson III Word Attack Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	48.74	0.89	10	54.69	.000
Student	*System 44*	1.08	0.90	334	1.19	.234
	Fall Woodcock-Johnson III Word Attack Score	0.77	0.03	334	22.27	.000
	Sex	-3.24	0.93	334	-3.50	.001
	Caucasian	-0.52	0.99	334	-0.52	.602
	Special Education	-2.81	1.14	334	-2.47	.014
	Elementary school level	-0.07	1.91	334	-0.04	.970
Random Effects						
Level	**Variance Components**	**Variance**				
School	Level 2	5.99				
Student	Level 1	68.94				
Random Effects (From Unconditional Model)[a]						
Level	**Variance Components**	**Variance**	**ICC**			
School	Level 2	42.94	.180			
Student	Level 1	195.18				

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D5
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring TOWRE Sight Word Efficiency Scores

Fixed Effects						
Level	Effect	Impact (β)	*SE*	*DF*	*t*	*p*
School	Intercept	66.98	0.44	10	150.71	.000
Student	*System 44*	0.10	0.54	337	0.18	.854
	Fall TOWRE Sight Word Efficiency Score	0.89	0.03	337	31.36	.000
	Sex	0.19	0.55	337	0.34	.732
	Caucasian	-0.85	0.58	337	-1.45	.147
	Special Education	-0.51	0.70	337	-0.73	.463
	Elementary school level	0.11	0.94	337	0.11	.910

Random Effects		
Level	Variance Components	Variance
School	Level 2	1.25
Student	Level 1	24.55

Random Effects (From Unconditional Model)[a]			
Level	Variance Components	Variance	ICC
School	Level 2	3.51	0.31
Student	Level 1	109.28	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D6
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring TOWRE Phonetic Decoding Efficiency Scores

Fixed Effects						
Level	Effect	Impact (β)	*SE*	*DF*	*t*	*p*
School	Intercept	33.65	0.48	10	70.69	.000
Student	*System 44*	-0.19	0.50	337	-0.37	.712
	Fall TOWRE Phonetic Decoding Efficiency Score	0.88	0.03	337	35.12	.000
	Sex	-0.99	0.52	337	-1.91	.057
	Caucasian	-0.25	0.55	337	-0.45	.652
	Special Education	-0.30	0.64	337	-0.47	.639
	Elementary school level	-1.29	1.00	337	-1.29	.197

Random Effects		
Level	Variance Components	Variance
School	Level 2	1.66
Student	Level 1	21.57

Random Effects (From Unconditional Model)[a]			
Level	Variance Components	Variance	ICC
School	Level 2	1.85	.016
Student	Level 1	112.09	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D7
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring CST Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	**SE**	**DF**	**t**	**p**
School	Intercept	333.09	3.20	10	104.19	.000
Student	*System 44*	4.01	4.23	280	0.95	.344
	Fall CST Score	0.45	0.07	280	6.76	.000
	Sex	7.70	4.35	280	1.77	.077
	Caucasian	7.21	4.61	280	1.56	.119
	Special Education	15.10	5.28	280	2.86	.005
	Elementary school level	27.82	6.86	280	4.06	.000
Random Effects						
Level	**Variance Components**	**Variance**				
School	Level 2	57.76				
Student	Level 1	1,269.46				
Random Effects (From Unconditional Model)[a]						
Level	**Variance Components**	**Variance**	**ICC**			
School	Level 2	363.55	.194			
Student	Level 1	1,508.04				

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D8
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SRI Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	563.58	12.43	10	45.35	.000
Student	*System 44*	45.02	16.64	325	2.71	.008
	Fall SRI Score	0.74	0.05	325	16.09	.000
	Sex	1.21	16.96	325	0.07	.944
	Caucasian	13.48	18.02	325	0.75	.455
	Special Education	-81.01	20.14	325	-4.02	.000
	Elementary school level	-4.17	26.39	325	-0.15	.875

Random Effects		
Level	**Variance Components**	**Variance**
School	Level 2	860.43
Student	Level 1	22,582.88

Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	4,163.13	.088
Student	Level 1	42,954.04	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D9
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Letter Name Accuracy Scores

Fixed Effects						
Level	Effect	Impact (β)	*SE*	*DF*	*t*	*p*
School	Intercept	98.38	0.30	9	332.37	.000
Student	*System 44*	0.27	0.51	286	0.52	.604
	Fall SPI Letter Name Accuracy Score	-0.01	0.02	286	-0.30	.764
	Sex	0.93	0.52	286	1.78	.077
	Caucasian	-0.80	0.55	286	-1.47	.142
	Special Education	-0.37	0.63	286	-0.58	.559
	Elementary school level	-0.49	0.67	286	-0.74	.461

Random Effects		
Level	Variance Components	Variance
School	Level 2	0.19
Student	Level 1	19.09

Random Effects (From Unconditional Model)[a]			
Level	Variance Components	Variance	ICC
School	Level 2	0.19	.010
Student	Level 1	19.09	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D10
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Sight Word Accuracy Scores

	Fixed Effects					
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	23.94	0.15	9	160.59	.000
Student	*System 44*	0.03	0.30	286	0.11	.916
	Fall SPI Sight Word Accuracy Score	0.53	0.04	286	13.35	.000
	Sex	0.54	0.31	286	1.77	.077
	Caucasian	-0.46	0.31	286	-1.45	.147
	Special Education	-0.28	0.37	286	-0.74	.457
	Elementary school level	0.15	0.34	286	0.44	.662

	Random Effects		
Level	**Variance Components**	**Variance**	
School	Level 2	0.00	
Student	Level 1	6.46	

	Random Effects (From Unconditional Model)[a]		
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	.00	.000
Student	Level 1	10.97	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D11
Final Model for Estimating Fixed and Random Effects of *System 44* on Spring SPI Sight Word Fluency Scores

		Fixed Effects				
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	10.27	0.28	9	37.18	.000
Student	*System 44*	1.74	0.50	286	3.48	.001
	Fall SPI Sight Word Fluency Score	0.48	0.08	286	6.17	.000
	Sex	0.79	0.51	286	1.55	.121
	Caucasian	-0.92	0.53	286	-1.74	.082
	Special Education	-1.28	0.62	286	-2.07	.039
	Elementary school level	-2.22	0.62	286	-3.56	.001

	Random Effects			
Level	**Variance Components**	**Variance**		
School	Level 2	0.12		
Student	Level 1	18.16		

	Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**	
School	Level 2	1.05	.046	
Student	Level 1	21.63		

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D12
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Nonsense Word Accuracy Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	**SE**	**DF**	**t**	**p**
School	Intercept	24.02	0.21	9	112.94	.000
Student	*System 44*	2.00	0.37	286	5.36	.000
	Fall SPI Nonsense Word Accuracy Score	0.34	0.05	286	6.86	.000
	Sex	0.18	0.38	286	0.47	.640
	Caucasian	0.42	0.40	286	1.07	.287
	Special Education	-1.11	0.47	286	-2.37	.018
	Elementary school level	0.35	0.48	286	0.72	.470

Random Effects		
Level	**Variance Components**	**Variance**
School	Level 2	0.09
Student	Level 1	10.13

Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	0.01	.001
Student	Level 1	13.34	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D13
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Nonsense Word Fluency Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	10.27	0.28	9	37.18	.000
Student	*System 44*	1.74	0.50	286	3.48	.001
	Fall SPI Nonsense Word Fluency Score	0.48	0.08	286	6.17	.000
	Sex	0.79	0.51	286	1.55	.121
	Caucasian	-0.92	0.53	286	-1.74	.082
	Special Education	-1.28	0.62	286	-2.07	.039
	Elementary school level	-2.22	0.62	286	-3.56	.001

Random Effects		
Level	**Variance Components**	**Variance**
School	Level 2	1.85
Student	Level 1	20.66

Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	0.60	.021
Student	Level 1	27.45	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D14
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Overall Accuracy Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	**SE**	**DF**	**t**	**p**
School	Intercept	47.96	0.28	9	170.78	.000
Student	*System 44*	1.99	0.56	286	3.56	.001
	Fall SPI Overall Accuracy Score	0.50	0.05	286	11.00	.000
	Sex	0.75	0.57	286	1.31	.193
	Caucasian	-0.13	0.59	286	-0.21	.832
	Special Education	-1.14	0.71	286	-1.61	.107
	Elementary school level	0.55	0.65	286	0.85	.395
Random Effects						
Level	**Variance Components**	**Variance**				
School	Level 2	0.01				
Student	Level 1	22.81				
Random Effects (From Unconditional Model)[a]						
Level	**Variance Components**	**Variance**	**ICC**			
School	Level 2	0.00	.000			
Student	Level 1	34.84				

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Exhibit D15
Final Model for Estimating Fixed and Random Effects of *System 44*
on Spring SPI Overall Fluency Scores

Fixed Effects						
Level	**Effect**	**Impact (β)**	*SE*	*DF*	*t*	*p*
School	Intercept	20.68	0.73	9	28.22	.000
Student	*System 44*	4.70	0.88	286	5.36	.000
	Fall SPI Overall Fluency Score	0.69	0.09	286	8.08	.000
	Sex	0.95	0.90	286	1.06	.288
	Caucasian	-1.32	0.96	286	-1.37	.172
	Special Education	-2.20	1.09	286	-2.02	.045
	Elementary school level	-3.30	1.62	286	-2.04	.041

Random Effects		
Level	**Variance Components**	**Variance**
School	Level 2	3.17
Student	Level 1	55.56

Random Effects (From Unconditional Model)[a]			
Level	**Variance Components**	**Variance**	**ICC**
School	Level 2	1.68	.022
Student	Level 1	75.18	

[a]The unconditional model is a 2-level model with students (Level 1) nested in schools (Level 2), and only an intercept term on the right-hand side of the model.

Appendix E
Student Proficiency on CST

Exhibit E1
Percentage of Students Performing at Each Level on CST

Program Group	Far Below	Below	Basic	Proficient	Advanced
Treatment					
Pretest	8%	18%	64%	10%	1%
Posttest	4%	14%	41%	32%	9%
Control					
Pretest	9%	24%	56%	11%	1%
Posttest	7%	12%	48%	23%	9%

Note. Treatment total $n = 140$. Control total $n = 147$.

Exhibit E2
Percentage of Students Achieving Proficiency on CST By Subgroup

Subgroup	Treatment			Control		
	n	Pretest	Posttest	*n*	Pretest	Posttest
Grade						
4	66	17%	61%	67	21%	51%
5	22	14%	27%	24	12%	29%
6	30	3%	13%	30	0%	13%
7	15	0%	40%	16	0%	6%
8	7	0%	14%	10	0%	10%
Decoding Status						
Pre decoder	6	0%	33%	7	29%	43%
Beginning decoder	26	0%	35%	26	8%	35%
Developing decoder	105	13%	43%	110	12%	30%
FRL Status						
None	79	8%	43%	89	16%	39%
Reduced-Price	46	15%	37%	47	2%	17%
Free	15	13%	40%	11	18%	36%
ELL Status						
English only	94	6%	42%	107	14%	36%
Initial full English speaker	19	21%	58%	12	8%	25%
English learner	14	0%	14%	17	0%	6%
Redesignated former English learner	13	39%	38%	11	9%	46%
SPED Status						
None	107	13%	38%	110	14%	33%
Specific learning disability	8	0%	38%	16	0%	25%
Speech or language impairment	12	8%	67%	12	17%	42%
Other classification	13	0%	38%	9	0%	22%
Ethnicity						
Caucasian	89	11%	43%	93	15%	33%
African American	11	0%	46%	16	12%	31%
Hispanic	21	10%	29%	23	0%	30%
Asian/Pacific Islander	8	12%	25%	7	0%	29%
Filipino	10	20%	50%	7	14%	29%

Exhibit continues

Exhibit E2 (continued)

Subgroup	Treatment			Control		
	n	Pretest	Posttest	*n*	Pretest	Posttest
School						
Alta Murrieta	5	0%	40%	5	0%	0%
Avaxat	15	40%	73%	14	50%	64%
Buchanan	14	14%	71%	14	7%	57%
Curran	6	0%	17%	7	0%	29%
Monte Vista	21	24%	62%	26	35%	58%
Murrieta	13	0%	23%	12	0%	25%
Rail Ranch	14	7%	43%	13	0%	31%
Shivela	17	0%	18%	20	0%	0%
Thompson	19	0%	26%	18	0%	17%
McElhinney	4	0%	25%	5	0%	20%
Warm Springs	12	8%	17%	13	0%	15%

Appendix F
Mean Scores on Reading Tests, SRI, and SPI
Overall Accuracy and Fluency Outcomes

Exhibit F1
TOSREC Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	34.48	37.86	3.38	72	34.16	38.59	4.44
5	25	27.39	32.32	4.93	27	26.25	32.91	6.66
6	43	30.57	26.83	-3.74	39	24.15	25.81	1.66
7	20	24.61	28.95	4.34	20	29.21	36.46	7.25
8	11	13.60	11.08	-2.52	10	12.57	14.45	1.87
Decoding Status								
Pre decoder	6	35.85	39.05	3.20	7	29.66	26.31	-3.34
Beginning decoder	44	19.09	21.18	2.09	36	21.59	25.53	3.94
Developing decoder	119	33.72	34.77	1.05	120	30.85	35.72	4.87
FRL Status								
None	96	29.65	31.44	1.79	102	30.15	32.81	2.66
Reduced-Price	58	28.68	29.67	0.98	54	24.45	31.18	6.73
Free	18	35.14	38.21	3.07	11	37.87	44.43	6.55
ELL Status								
English only	113	31.34	32.08	0.74	121	29.94	33.52	3.58
Initial full English speaker	21	28.86	32.94	4.09	14	33.47	38.59	5.12
English learner	25	17.91	20.72	2.80	20	20.18	28.46	8.28
Redesignated former English learner student	13	41.94	45.50	3.56	12	25.49	29.36	3.87
SPED Status								
None	120	33.79	35.77	1.97	121	32.44	36.80	4.36
Specific learning disability	16	17.61	20.26	2.64	20	16.60	20.93	4.33
Speech or language impairment	12	32.54	34.80	2.26	12	24.43	28.18	3.74
Other classification	24	17.78	16.37	-1.41	15	18.05	22.02	3.97
Ethnicity								
Caucasian	106	30.69	32.68	1.99	107	30.67	34.32	3.65
African American	15	30.90	29.95	-0.95	18	28.46	31.63	3.17
Hispanic	29	29.05	31.18	2.13	25	23.42	31.07	7.64
Asian/Pacific Islander	10	27.34	28.75	1.41	9	25.07	26.09	1.02
Filipino	11	27.44	28.58	1.15	7	28.61	37.57	8.96

Exhibit continues

Exhibit F1 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	22.76	24.42	1.66	5	31.40	20.04	-11.36
Avaxat	17	37.47	40.43	2.96	14	39.81	40.87	1.06
Buchanan	15	37.25	39.43	2.19	15	37.63	45.92	8.29
Curran	8	22.24	25.09	2.85	7	21.39	23.44	2.06
Monte Vista	25	35.45	39.69	4.24	29	31.03	37.11	6.09
Murrieta	13	28.33	35.69	7.36	14	32.62	35.98	3.36
Rail Ranch	15	30.66	34.28	3.62	15	25.54	37.47	11.93
Shivela	29	26.46	25.27	-1.19	25	25.53	26.54	1.01
Thompson	23	27.89	25.27	-2.62	18	25.28	28.63	3.35
McElhinney	6	17.32	16.55	-0.77	9	16.74	19.28	2.53
Warm Springs	16	26.83	27.59	0.76	17	23.49	30.23	6.74

Exhibit F2
CTOPP Elision Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	23.67	25.82	2.15	72	23.29	24.15	0.86
5	25	22.00	23.20	1.20	27	22.07	24.00	1.93
6	43	21.70	23.21	1.51	39	22.49	22.56	0.08
7	20	19.25	20.65	1.40	21	22.00	23.29	1.29
8	12	23.00	22.50	-0.50	12	20.83	22.25	1.42
Decoding Status								
Pre decoder	6	22.50	21.83	-0.67	7	20.71	23.57	2.86
Beginning decoder	45	20.84	22.40	1.56	38	19.24	20.39	1.16
Developing decoder	119	23.13	24.76	1.63	121	23.65	24.33	0.68
FRL Status								
None	97	22.13	24.14	2.01	103	22.47	22.97	0.50
Reduced-Price	58	21.98	23.93	1.95	56	22.23	23.86	1.62
Free	18	25.00	23.11	-1.89	11	24.82	26.64	1.82
ELL Status								
English only	114	22.52	24.55	2.04	124	22.24	23.39	1.15
Initial full English speaker	21	22.86	22.81	-0.05	14	25.71	24.79	-0.93
English learner	25	19.96	20.04	0.08	20	21.05	22.55	1.50
Redesignated former English learner student	13	25.08	28.23	3.15	12	24.42	24.75	0.33
SPED Status								
None	120	23.68	25.22	1.54	121	23.80	24.62	0.82
Specific learning disability	17	18.18	19.41	1.24	21	19.05	20.67	1.62
Speech or language impairment	12	22.33	23.67	1.33	13	21.23	21.08	-0.15
Other classification	24	18.92	21.08	2.17	16	19.13	21.00	1.88
Ethnicity								
Caucasian	107	22.43	24.23	1.80	109	22.94	23.26	0.32
African American	15	22.33	24.20	1.87	18	22.11	23.67	1.56
Hispanic	29	22.10	23.21	1.10	26	22.54	25.19	2.65
Asian/Pacific Islander	10	22.30	24.50	2.20	9	18.00	21.44	3.44
Filipino	11	23.18	23.18	0.00	7	24.00	24.14	0.14

Exhibit continues

Exhibit F2 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	18.20	23.00	4.80	5	23.80	25.00	1.20
Avaxat	17	23.47	25.18	1.71	14	22.71	22.07	-0.64
Buchanan	15	24.33	27.40	3.07	15	21.93	24.07	2.13
Curran	8	23.13	25.75	2.63	7	21.29	25.43	4.14
Monte Vista	25	22.16	25.76	3.60	29	23.31	24.45	1.14
Murrieta	13	27.08	23.00	-4.08	14	26.79	24.50	-2.29
Rail Ranch	15	22.13	24.13	2.00	15	20.47	24.13	3.67
Shivela	29	22.28	22.66	0.38	25	22.36	21.84	-0.52
Thompson	24	19.42	21.96	2.54	21	22.38	23.38	1.00
McElhinney	6	17.50	18.00	0.50	9	20.22	17.22	-3.00
Warm Springs	16	23.56	24.31	0.75	17	22.24	26.12	3.88

Exhibit F3
Woodcock-Johnson II Word Identification Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	50.88	58.47	7.59	72	50.47	57.38	6.90
5	23	41.52	49.84	8.32	27	43.30	51.63	8.33
6	42	38.29	46.86	8.57	38	33.18	39.50	6.32
7	20	34.85	36.90	2.05	20	35.57	42.25	6.68
8	12	20.17	26.92	6.75	11	22.92	26.55	3.63
Decoding Status								
Pre decoder	6	39.83	44.17	4.33	7	46.71	52.00	5.29
Beginning decoder	43	33.28	39.69	6.41	37	31.08	38.30	7.22
Developing decoder	118	45.83	53.55	7.72	119	44.40	51.26	6.86
FRL Status								
None	94	43.20	49.88	6.67	102	41.45	47.59	6.14
Reduced-Price	58	40.60	48.57	7.97	54	39.98	48.52	8.54
Free	18	44.44	51.94	7.50	11	52.18	59.18	7.00
ELL Status								
English only	113	42.78	49.83	7.05	121	40.73	47.36	6.64
Initial full English speaker	19	47.16	53.90	6.75	14	51.00	57.07	6.07
English learner	25	33.36	40.96	7.60	20	39.20	48.05	8.85
Redesignated former English learner student	13	50.15	57.92	7.77	12	44.50	52.83	8.33
SPED Status								
None	119	47.47	55.53	8.05	120	46.94	54.17	7.22
Specific learning disability	16	24.50	32.88	8.38	19	25.76	30.89	5.13
Speech or language impairment	12	40.25	46.83	6.58	13	33.46	38.23	4.77
Other classification	23	30.09	33.58	3.50	16	28.94	36.19	7.25
Ethnicity								
Caucasian	104	42.55	49.61	7.06	109	41.82	48.82	7.00
African American	15	42.53	48.87	6.33	18	41.33	50.06	8.72
Hispanic	29	40.59	46.45	5.86	24	43.65	49.25	5.60
Asian/Pacific Islander	10	46.30	53.20	6.90	9	35.44	45.22	9.78
Filipino	11	44.27	57.36	13.09	6	46.00	50.83	4.83

Exhibit continues

Exhibit F3 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	36.20	41.20	5.00	5	49.60	55.40	5.80
Avaxat	17	51.88	61.24	9.35	14	50.00	56.21	6.21
Buchanan	15	48.80	61.33	12.53	15	52.87	62.20	9.33
Curran	8	50.13	55.75	5.63	7	37.57	48.86	11.29
Monte Vista	23	48.04	55.36	7.32	29	48.52	55.76	7.24
Murrieta	13	51.08	53.69	2.62	14	48.71	54.43	5.71
Rail Ranch	15	46.93	54.60	7.67	15	47.33	53.80	6.47
Shivela	28	38.00	44.62	6.62	25	32.40	40.64	8.24
Thompson	24	31.75	35.21	3.46	18	32.76	31.33	-1.43
McElhinney	6	27.83	41.83	14.00	9	27.78	39.00	11.22
Warm Springs	16	34.63	42.88	8.25	17	33.41	41.59	8.18

Exhibit F4
Woodcock-Johnson III Word Attack Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	52.16	56.95	4.78	71	51.36	53.94	2.58
5	23	47.00	50.76	3.76	27	43.59	47.41	3.81
6	43	38.49	45.28	6.79	39	35.62	41.87	6.26
7	20	35.10	37.00	1.90	21	36.19	43.86	7.67
8	12	25.08	33.83	8.75	12	28.67	32.17	3.50
Decoding Status								
Pre decoder	6	37.83	47.83	10.00	7	40.86	45.57	4.71
Beginning decoder	45	35.02	41.44	6.42	37	36.24	40.95	4.71
Developing decoder	117	47.77	52.19	4.42	121	45.05	49.22	4.17
FRL Status								
None	96	44.08	49.73	5.65	103	42.04	44.96	2.92
Reduced-Price	57	42.96	47.83	4.86	55	42.77	49.96	7.20
Free	18	48.11	51.17	3.06	11	54.18	56.73	2.55
ELL Status								
English only	113	44.06	49.45	5.39	123	41.93	45.88	3.95
Initial full English speaker	20	46.85	50.81	3.96	14	46.21	53.07	6.86
English learner	25	37.88	41.68	3.80	20	41.50	47.60	6.10
Redesignated former English learner student	13	52.62	59.46	6.85	12	53.75	55.42	1.67
SPED Status								
None	118	48.64	54.18	5.54	120	47.45	51.01	3.56
Specific learning disability	17	31.29	34.65	3.35	21	27.86	36.43	8.57
Speech or language impairment	12	42.92	46.58	3.67	13	35.69	40.00	4.31
Other classification	24	31.71	36.25	4.54	16	36.13	40.25	4.13
Ethnicity								
Caucasian	105	43.25	48.89	5.64	109	43.61	46.90	3.28
African American	15	44.27	47.13	2.87	17	42.39	47.12	4.73
Hispanic	29	44.97	46.93	1.97	26	44.46	51.50	7.04
Asian/Pacific Islander	10	46.70	54.10	7.40	9	35.56	40.78	5.22
Filipino	11	48.55	58.45	9.91	7	42.71	51.43	8.71

Exhibit continues

Exhibit F4 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	4	37.50	42.40	4.90	5	49.00	57.20	8.20
Avaxat	17	55.94	58.06	2.12	14	50.79	50.43	-0.36
Buchanan	15	53.40	56.13	2.73	14	50.07	53.07	3.00
Curran	8	51.50	58.75	7.25	7	42.00	55.14	13.14
Monte Vista	24	48.88	54.28	5.41	29	47.79	50.93	3.14
Murrieta	13	52.31	56.46	4.15	14	50.86	53.07	2.21
Rail Ranch	15	48.13	54.93	6.80	15	51.73	51.27	-0.47
Shivela	29	37.34	44.55	7.21	25	37.52	42.44	4.92
Thompson	24	33.67	34.58	0.92	21	35.29	37.24	1.95
McElhinney	6	27.17	41.83	14.67	9	28.11	39.56	11.44
Warm Springs	16	37.75	45.00	7.25	17	33.00	43.59	10.59

Exhibit F5
TOWRE Sigh Word Efficiency Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	61.97	67.10	5.14	72	61.99	67.00	5.01
5	25	63.50	66.48	2.98	27	61.46	65.52	4.06
6	43	63.58	68.58	5.00	39	62.71	66.31	3.60
7	20	63.78	67.25	3.47	21	66.07	70.48	4.40
8	12	58.50	62.42	3.92	12	59.54	64.00	4.46
Decoding Status								
Pre decoder	6	64.83	68.08	3.25	7	55.71	64.36	8.64
Beginning decoder	45	54.50	59.80	5.30	38	54.41	57.95	3.54
Developing decoder	119	65.37	69.68	4.31	121	65.05	69.58	4.53
FRL Status								
None	97	61.46	66.32	4.86	103	62.75	66.40	3.65
Reduced-Price	58	63.71	67.76	4.05	56	61.71	67.60	5.88
Free	18	64.75	68.92	4.17	11	62.91	67.73	4.82
ELL Status								
English only	114	62.68	67.44	4.75	124	62.35	66.45	4.10
Initial full English speaker	21	62.69	65.88	3.19	14	65.96	71.07	5.11
English learner	25	58.82	63.24	4.42	20	60.58	66.25	5.68
Redesignated former English learner student	13	68.42	73.15	4.73	12	62.04	67.50	5.46
SPED Status								
None	120	64.62	69.13	4.51	121	64.86	69.21	4.35
Specific learning disability	17	55.94	60.94	5.00	21	57.45	63.29	5.83
Speech or language impairment	12	64.83	68.67	3.83	13	56.31	60.85	4.54
Other classification	24	55.81	60.35	4.54	16	55.25	58.28	3.03
Ethnicity								
Caucasian	107	62.68	67.11	4.43	109	62.37	66.24	3.88
African American	15	62.20	68.57	6.37	18	65.03	68.47	3.44
Hispanic	29	63.16	66.57	3.41	26	60.69	67.25	6.56
Asian/Pacific Islander	10	62.45	67.80	5.35	9	56.56	64.17	7.61
Filipino	11	61.95	66.14	4.18	7	70.36	75.00	4.64

Exhibit continues

Exhibit F5 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	60.40	66.00	5.60	5	56.30	64.40	8.10
Avaxat	17	61.18	68.35	7.18	14	61.29	66.36	5.07
Buchanan	15	65.63	69.23	3.60	15	66.17	70.67	4.50
Curran	8	60.81	64.00	3.19	7	57.14	62.21	5.07
Monte Vista	25	62.56	67.14	4.58	29	63.69	67.60	3.91
Murrieta	13	62.77	63.69	0.92	14	60.57	63.54	2.96
Rail Ranch	15	61.20	67.43	6.23	15	59.73	66.43	6.70
Shivela	29	64.78	69.71	4.93	25	65.86	69.66	3.80
Thompson	24	60.33	63.35	3.02	21	62.19	65.02	2.83
McElhinney	6	52.00	57.92	5.92	9	60.94	65.11	4.17
Warm Springs	16	67.06	72.09	5.03	17	61.56	67.12	5.56

Exhibit F6
TOWRE Phonetic Decoding Efficiency Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	30.33	34.10	3.77	72	29.95	34.06	4.11
5	25	31.70	34.26	2.56	27	30.24	31.78	1.54
6	43	30.26	34.90	4.64	39	27.91	32.51	4.60
7	20	29.65	32.75	3.10	21	34.83	39.76	4.93
8	12	26.83	29.33	2.50	12	29.96	32.75	2.79
Decoding Status								
Pre decoder	6	29.17	33.00	3.83	7	23.00	28.00	5.00
Beginning decoder	45	23.57	27.20	3.63	38	22.45	27.28	4.83
Developing decoder	119	32.60	36.27	3.67	121	32.43	36.10	3.68
FRL Status								
None	97	29.14	33.28	4.14	103	29.23	33.27	4.04
Reduced-Price	58	31.34	34.24	2.91	56	30.63	34.85	4.21
Free	18	32.14	35.47	3.33	11	35.05	35.64	0.59
ELL Status								
English only	114	29.77	33.60	3.83	124	29.42	33.31	3.89
Initial full English speaker	21	31.86	35.81	3.95	14	36.00	39.32	3.32
English learner	25	27.14	30.08	2.94	20	29.18	34.25	5.08
Redesignated former English learner student	13	37.04	39.88	2.85	12	31.33	33.75	2.42
SPED Status								
None	120	31.90	35.58	3.67	121	32.26	35.69	3.43
Specific learning disability	17	24.68	29.62	4.94	21	22.76	29.14	6.38
Speech or language impairment	12	32.29	33.96	1.67	13	23.73	26.69	2.96
Other classification	24	24.46	28.02	3.56	16	28.88	33.06	4.19
Ethnicity								
Caucasian	107	29.69	33.53	3.85	109	29.56	33.27	3.71
African American	15	29.87	34.07	4.20	18	31.64	34.69	3.06
Hispanic	29	31.93	33.66	1.72	26	31.04	35.12	4.08
Asian/Pacific Islander	10	29.45	34.70	5.25	9	22.00	29.11	7.11
Filipino	11	33.05	37.23	4.18	7	40.64	43.79	3.14

Exhibit continues

Exhibit F6 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	26.80	24.90	-1.90	5	31.70	31.90	0.20
Avaxat	17	29.82	34.38	4.56	14	29.75	31.68	1.93
Buchanan	15	32.13	36.80	4.67	15	33.07	36.17	3.10
Curran	8	27.44	29.69	2.25	7	28.21	27.79	-0.43
Monte Vista	25	32.50	37.18	4.68	29	30.43	35.43	5.00
Murrieta	13	30.04	32.46	2.42	14	26.86	30.93	4.07
Rail Ranch	15	30.73	33.03	2.30	15	29.73	34.00	4.27
Shivela	29	31.10	35.59	4.48	25	31.84	36.48	4.64
Thompson	24	27.92	30.21	2.29	21	31.69	35.21	3.52
McElhinney	6	24.33	29.58	5.25	9	27.06	32.61	5.56
Warm Springs	16	31.13	35.81	4.69	17	27.91	32.41	4.50

Exhibit F7
SRI Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	73	411.21	586.96	175.75	71	392.50	541.96	149.46
5	25	375.96	584.44	208.48	27	369.67	557.44	187.78
6	43	413.47	579.53	166.07	33	385.81	478.39	92.58
7	20	433.70	646.60	212.90	20	442.33	647.65	205.32
8	12	340.92	497.83	156.92	8	457.83	477.63	19.79
Decoding Status								
Pre decoder	6	405.00	545.33	140.33	7	489.57	543.86	54.29
Beginning decoder	45	305.18	485.58	180.40	34	310.89	442.24	131.34
Developing decoder	119	440.87	625.94	185.08	114	419.08	570.44	151.36
FRL Status								
None	97	391.45	585.71	194.26	96	417.14	562.33	145.20
Reduced-Price	58	434.84	594.57	159.72	52	357.82	490.19	132.37
Free	18	376.06	554.78	178.72	11	428.45	601.55	173.09
ELL Status								
English only	114	409.70	597.31	187.61	114	417.93	566.18	148.25
Initial full English speaker	21	445.71	631.29	185.57	14	469.29	600.71	131.43
English learner	25	285.12	444.60	159.48	19	202.80	339.26	136.46
Redesignated former English learner student	13	520.54	678.46	157.92	12	438.92	557.50	118.58
SPED Status								
None	120	425.58	626.53	200.95	120	407.88	563.46	155.57
Specific learning disability	17	361.88	477.35	115.47	16	377.24	478.88	101.64
Speech or language impairment	12	397.92	602.08	204.17	11	377.75	478.91	101.16
Other classification	24	331.88	448.42	116.54	12	366.00	462.17	96.17
Ethnicity								
Caucasian	107	418.11	598.56	180.45	102	421.75	562.60	140.85
African American	15	403.20	577.40	174.20	18	429.56	510.17	80.61
Hispanic	29	393.03	579.90	186.86	24	299.65	471.17	171.51
Asian/Pacific Islander	10	323.10	523.10	200.00	8	366.56	522.50	155.94
Filipino	11	392.09	568.27	176.18	7	379.57	576.43	196.86

Exhibit continues

Exhibit F7 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	232.40	398.60	166.20	5	246.20	300.60	54.40
Avaxat	17	478.82	682.35	203.53	14	494.50	623.93	129.43
Buchanan	15	468.60	642.87	174.27	15	523.27	636.60	113.33
Curran	8	300.25	561.38	261.13	7	164.43	395.43	231.00
Monte Vista	25	407.12	578.92	171.80	28	413.66	568.29	154.63
Murrieta	13	351.38	492.31	140.92	14	262.79	435.64	172.86
Rail Ranch	15	395.87	590.60	194.73	15	360.80	597.60	236.80
Shivela	29	411.93	571.03	159.10	23	449.46	500.22	50.76
Thompson	24	373.58	586.58	213.00	12	380.00	607.67	227.67
McElhinney	6	381.33	471.50	90.17	9	410.78	535.44	124.67
Warm Springs	16	459.00	647.44	188.44	17	410.24	526.18	115.94

Exhibit F8
SPI Overall Accuracy Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	72	41.72	49.26	7.54	70	41.21	46.46	5.24
5	25	41.96	49.56	7.60	26	41.12	47.26	6.14
6	42	42.86	48.16	5.31	30	42.23	46.05	3.82
7	19	42.58	47.30	4.72	16	44.69	48.10	3.41
8	11	44.18	46.67	2.48	6	39.50	43.58	4.08
Decoding Status								
Pre decoder	6	37.67	47.67	10.00	7	33.71	48.00	14.29
Beginning decoder	44	39.43	44.73	5.30	35	38.46	43.32	4.86
Developing decoder	118	43.64	50.20	6.57	106	43.31	47.40	4.09
FRL Status								
None	97	41.58	48.04	6.46	87	41.48	46.24	4.76
Reduced-Price	55	43.04	49.22	6.19	52	41.85	46.82	4.98
Free	17	44.00	49.83	5.83	9	43.11	47.18	4.07
ELL Status								
English only	110	42.34	48.48	6.15	103	41.55	46.17	4.62
Initial full English speaker	21	42.86	50.38	7.52	14	43.93	49.36	5.43
English learner	25	39.16	45.96	6.80	20	40.15	46.00	5.85
Redesignated former English learner student	13	47.08	52.15	5.08	11	43.18	47.33	4.15
SPED Status								
None	118	42.96	49.76	6.80	111	42.58	47.44	4.86
Specific learning disability	16	40.00	46.12	6.12	15	41.40	45.43	4.03
Speech or language impairment	12	41.08	49.42	8.33	10	37.10	43.46	6.36
Other classification	23	41.13	44.33	3.20	12	37.92	43.00	5.08
Ethnicity								
Caucasian	104	42.10	48.50	6.40	94	41.64	46.30	4.66
African American	15	42.73	48.80	6.07	15	43.33	47.56	4.22
Hispanic	28	42.96	48.21	5.24	23	40.00	45.31	5.31
Asian/Pacific Islander	10	40.60	49.00	8.40	9	39.44	46.56	7.11
Filipino	11	43.64	50.82	7.18	7	47.71	51.86	4.14

Exhibit continues

Exhibit F8 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	41.20	48.00	6.80	5	40.40	47.00	6.60
Avaxat	17	42.00	50.35	8.35	14	41.57	47.43	5.86
Buchanan	15	43.73	49.07	5.33	13	44.54	47.87	3.33
Curran	8	43.75	51.00	7.25	7	37.00	43.57	6.57
Monte Vista	24	39.67	48.36	8.69	28	41.43	46.69	5.26
Murrieta	13	42.00	48.23	6.23	14	39.07	45.86	6.79
Rail Ranch	15	41.93	50.60	8.67	15	41.67	46.87	5.20
Shivela	28	43.25	48.28	5.03	24	44.00	47.29	3.29
Thompson	22	43.32	46.67	3.35	2	36.00	43.81	7.81
McElhinney	6	39.83	43.67	3.83	9	43.11	46.44	3.33
Warm Springs	16	43.25	49.69	6.44	17	41.35	47.65	6.29

Exhibit F9
SPI Overall Fluency Means By Subgroup

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
Grade								
4	72	12.97	22.12	9.15	70	13.99	18.49	4.50
5	25	15.00	22.40	7.40	26	13.73	18.11	4.38
6	42	14.36	23.81	9.46	30	13.93	18.50	4.57
7	19	14.16	22.10	7.94	16	16.13	21.71	5.59
8	11	11.64	20.00	8.36	6	13.00	19.75	6.75
Decoding Status								
Pre decoder	6	8.17	24.50	16.33	7	6.86	11.86	5.00
Beginning decoder	44	6.77	15.49	8.72	35	7.69	13.24	5.55
Developing decoder	118	16.43	25.13	8.70	106	16.73	20.90	4.17
FRL Status								
None	97	13.26	22.02	8.76	87	13.60	19.24	5.65
Reduced-Price	55	13.95	21.66	7.71	52	14.46	18.54	4.07
Free	17	15.06	27.17	12.11	9	17.22	17.82	0.60
ELL Status								
English only	110	13.59	21.72	8.13	103	13.80	18.40	4.60
Initial full English speaker	21	15.33	26.76	11.43	14	15.50	23.43	7.93
English learner	25	11.16	20.64	9.48	20	13.30	18.75	5.45
Redesignated former English learner student	13	16.38	25.15	8.77	11	16.91	19.33	2.42
SPED Status								
None	118	14.26	23.47	9.20	111	14.52	20.17	5.65
Specific learning disability	16	11.56	17.41	5.85	15	13.07	17.10	4.03
Speech or language impairment	12	13.92	26.67	12.75	10	14.60	15.23	0.63
Other classification	23	11.91	18.71	6.80	12	11.33	14.53	3.20
Ethnicity								
Caucasian	104	13.75	22.13	8.38	94	13.95	18.40	4.46
African American	15	12.80	22.93	10.13	15	15.00	21.28	6.28
Hispanic	28	13.54	21.62	8.08	23	14.48	18.31	3.83
Asian/Pacific Islander	10	12.70	24.60	11.90	9	13.22	15.11	1.89
Filipino	11	15.00	25.55	10.55	7	14.57	27.57	13.00

Exhibit continues

Exhibit F9 (continued)

Subgroup	Treatment				Control			
	n	Pretest	Posttest	Gain	*n*	Pretest	Posttest	Gain
School								
Alta Murrieta	5	11.20	14.20	3.00	5	15.00	15.80	0.80
Avaxat	17	13.59	21.76	8.18	14	16.00	18.36	2.36
Buchanan	15	13.40	21.33	7.93	13	15.92	18.07	2.14
Curran	8	15.38	19.25	3.88	7	12.43	12.86	0.43
Monte Vista	24	12.71	24.60	11.89	28	13.36	20.66	7.30
Murrieta	13	14.46	23.00	8.54	14	12.07	15.64	3.57
Rail Ranch	15	13.67	23.07	9.40	15	13.33	20.33	7.00
Shivela	28	13.14	22.45	9.31	24	15.04	20.83	5.79
Thompson	22	14.68	20.00	5.32	2	12.00	18.33	6.33
McElhinney	6	11.67	23.00	11.33	9	14.67	22.00	7.33
Warm Springs	16	14.94	27.31	12.38	17	13.94	18.41	4.47

Appendix G
Student Characteristics

Exhibit G1
Characteristics of Students By Exit Date

Characteristic	Exit Date		
	Winter (*n* = 45)	Spring (*n* = 56)	End-of-Year (*n* = 71)
Grade Level			
4	12 (27%)	32 (57%)	28 (39%)
5	5 (11%)	11 (20%)	9 (13%)
6	14 (31%)	11 (20%)	18 (25%)
7	10 (22%)	1 (2%)	9 (13%)
8	4 (9%)	1 (2%)	7 (10%)
Sex			
Male	30 (67%)	28 (50%)	48 (68%)
Female	15 (33%)	28 (50%)	23 (32%)
Free or Reduced-Price Meals			
None	26 (58%)	29 (52%)	41 (58%)
Reduced-price	14 (31%)	19 (34%)	25 (35%)
Free	5 (11%)	8 (14%)	5 (7%)
English Learner Status			
English only	32 (71%)	33 (59%)	49 (69%)
Initial full English speaker	6 (13%)	8 (14%)	6 (8%)
English learner	2 (4%)	8 (14%)	15 (21%)
Redesignated former English learner student	5 (11%)	7 (13%)	1 (1%)
Special Education Status			
None	33 (73%)	47 (84%)	39 (55%)
Specific learning disability	2 (4%)	3 (5%)	12 (17%)
Speech or language impairment	4 (9%)	5 (9%)	3 (4%)
Other classification	6 (13%)	1 (2%)	17 (24%)
Primary Ethnicity			
Caucasian	31 (69%)	33 (59%)	43 (61%)
African American	2 (4%)	6 (11%)	7 (10%)
Hispanic	7 (16%)	11 (20%)	11 (16%)
Asian/Pacific Islander	1 (2%)	3 (5%)	5 (7%)
Filipino	4 (9%)	3 (5%)	4 (6%)

Exhibit continues

Exhibit G1 (continued)

Characteristic	Exit Date		
	Winter **(*n* = 45)**	**Spring** **(*n* = 56)**	**End-of-Year** **(*n* = 71)**
School			
Alta Murrieta	0 (0%)	5 (9%)	0 (0%)
Avaxat	2 (4%)	7 (13%)	8 (11%)
Buchanan	0 (0%)	14 (25%)	1 (1%)
Curran	0 (0%)	2 (4%)	6 (8%)
Monte Vista	5 (11%)	7 (13%)	12 (17%)
Murrieta	4 (9%)	5 (9%)	4 (6%)
Rail Ranch	6 (13%)	3 (5%)	6 (8%)
Shivela	11 (24%)	8 (14%)	10 (14%)
Thompson	9 (20%)	3 (5%)	12 (17%)
McElhinney	2 (4%)	1 (2%)	3 (4%)
Warm Springs	6 (13%)	1 (2%)	9 (13%)

Exhibit G2
Characteristics of Students By Total Number of Topics Completed

Characteristic	Number of Completed Topics		
	Less Than 100 (*n* = 43)	100 to 159 (*n* = 37)	160 (*n* = 92)
Grade Level			
4	21 (49%)	22 (59%)	29 (32%)
5	6 (14%)	10 (27%)	9 (10%)
6	7 (16%)	3 (8%)	33 (36%)
7	6 (14%)	1 (3%)	13 (14%)
8	3 (7%)	1 (3%)	8 (9%)
Sex			
Male	27 (63%)	25 (68%)	54 (59%)
Female	16 (37%)	12 (32%)	38 (41%)
Free or Reduced-Price Meals			
None	24 (56%)	18 (49%)	54 (59%)
Reduced-price	15 (35%)	14 (38%)	29 (32%)
Free	4 (9%)	5 (14%)	9 (10%)
English Learner Status			
English only	30 (70%)	22 (59%)	62 (67%)
Initial full English speaker	2 (5%)	6 (16%)	12 (13%)
English learner	10 (23%)	4 (11%)	11 (12%)
Redesignated former English learner student	1 (2%)	5 (14%)	7 (8%)
Special Education Status			
None	26 (60%)	29 (78%)	64 (70%)
Specific learning disability	4 (9%)	5 (14%)	8 (9%)
Speech or language impairment	3 (7%)	1 (3%)	8 (9%)
Other classification	10 (23%)	2 (5%)	12 (13%)
Primary Ethnicity			
Caucasian	26 (62%)	20 (54%)	61 (66%)
African American	2 (5%)	3 (8%)	10 (11%)
Hispanic	9 (21%)	7 (19%)	13 (14%)
Asian/Pacific Islander	4 (10%)	2 (5%)	3 (3%)
Filipino	1 (2%)	5 (14%)	5 (5%)

Exhibit continues

Exhibit G2 (continued)

Characteristic	Number of Completed Topics		
	Less Than 100 (*n* = 43)	100 to 159 (*n* = 37)	160 (*n* = 92)
School			
Alta Murrieta	5 (12%)	0 (0%)	0 (0%)
Avaxat	4 (9%)	4 (11%)	9 (10%)
Buchanan	6 (14%)	8 (22%)	1 (1%)
Curran	4 (9%)	2 (5%)	2 (2%)
Monte Vista	5 (12%)	10 (27%)	9 (10%)
Murrieta	2 (5%)	3 (8%)	8 (9%)
Rail Ranch	1 (2%)	5 (14%)	9 (10%)
Shivela	3 (7%)	4 (11%)	22 (24%)
Thompson	10 (23%)	1 (3%)	13 (14%)
McElhinney	3 (7%)	0 (0%)	3 (3%)
Warm Springs	0 (0%)	0 (0%)	16 (17%)

Exhibit G3
Characteristics of Students By Initial Decoding Status

Characteristic	Decoding Status		
	Pre (*n* = 6)	Beginning (*n* = 44)	Developing (*n* = 118)
Grade Level			
4	4 (67%)	19 (43%)	48 (41%)
5	1 (17%)	5 (11%)	19 (16%)
6	0 (0%)	10 (23%)	32 (27%)
7	0 (0%)	5 (11%)	14 (12%)
8	1 (17%)	5 (11%)	5 (4%)
Sex			
Male	5 (83%)	27 (61%)	72 (61%)
Female	1 (17%)	17 (39%)	46 (39%)
Free or Reduced-Price Meals			
None	3 (50%)	31 (70%)	62 (53%)
Reduced-price	1 (17%)	13 (30%)	41 (35%)
Free	2 (33%)	0 (0%)	15 (13%)
English Learner Status			
English only	5 (83%)	30 (68%)	75 (64%)
Initial full English speaker	0 (0%)	4 (9%)	16 (14%)
English learner	1 (17%)	9 (20%)	15 (13%)
Redesignated former English learner student	0 (0%)	1 (2%)	12 (10%)
Special Education Status			
None	6 (100%)	23 (52%)	88 (75%)
Specific learning disability	0 (0%)	7 (16%)	9 (8%)
Speech or language impairment	0 (0%)	4 (9%)	8 (7%)
Other classification	0 (0%)	10 (23%)	13 (11%)
Primary Ethnicity			
Caucasian	3 (50%)	27 (61%)	74 (63%)
African American	1 (17%)	4 (9%)	10 (9%)
Hispanic	1 (17%)	8 (18%)	19 (16%)
Asian/Pacific Islander	1 (17%)	4 (9%)	4 (3%)
Filipino	0 (0%)	1 (2%)	10 (9%)

Exhibit continues

Exhibit G3 (continued)

Characteristic	Decoder Status		
	Pre (n = 6)	Beginning (n = 44)	Developing (n = 118)
School			
Alta Murrieta	0 (0%)	2 (5%)	3 (3%)
Avaxat	0 (0%)	4 (9%)	13 (11%)
Buchanan	1 (17%)	4 (9%)	10 (8%)
Curran	0 (0%)	1 (2%)	7 (6%)
Monte Vista	4 (67%)	6 (14%)	13 (11%)
Murrieta	0 (0%)	3 (7%)	10 (8%)
Rail Ranch	0 (0%)	4 (9%)	11 (9%)
Shivela	0 (0%)	9 (20%)	19 (16%)
Thompson	1 (17%)	6 (14%)	15 (13%)
McElhinney	0 (0%)	2 (5%)	4 (3%)
Warm Springs	0 (0%)	3 (7%)	13 (11%)

Appendix H
Baseline Equivalence Tests

Exhibit H1
Baseline Equivalence of Students Exiting in Winter, Spring, and End of Year
on Outcome Measures and Demographic Characteristics

Baseline Characteristic	Winter Exits			Spring Exits			End-of-Year Exits			p
	n	M	SD	n	M	SD	n	M	SD	
TOSREC[a]	45	38.38	15.48	56	33.30	13.84	71	21.93	14.06	.000
CTOPP Elision[b]	45	25.51	6.00	56	22.75	6.44	71	20.24	6.17	.000
Woodcock-Johnson III Word Identification[a]	44	47.86	12.13	56	47.66	13.51	69	34.74	15.74	.000
Woodcock-Johnson III Word Attack[a]	44	49.95	13.48	55	49.16	13.86	71	36.69	16.53	.000
TOWRE Sight Word Efficiency[b]	45	69.81	6.93	56	64.29	6.43	71	56.59	10.75	.000
TOWRE Phonetic Decoding Efficiency[b]	45	37.76	8.61	56	32.38	8.81	71	23.69	8.67	.000
CST[c]	43	322.51	30.79	50	324.42	33.65	48	300.90	39.57	.002
SRI[d]	45	498.91	132.58	56	408.14	160.88	71	343.66	184.43	.000
SPI Letter Name Accuracy[c]	44	99.59	1.90	55	94.25	13.41	69	95.68	12.87	.060
SPI Sight Word Accuracy[c]	44	23.77	2.58	55	22.35	3.16	69	19.28	3.80	.000
SPI Sight Word Fluency[c]	44	8.16	3.17	55	6.60	3.42	69	5.67	3.14	.001
SPI Nonsense Word Accuracy[c]	44	23.00	2.81	55	21.47	3.87	69	19.01	3.79	.000
SPI Nonsense Word Fluency[c]	44	8.98	3.10	55	7.25	3.09	69	5.49	3.45	.000
SPI Overall Accuracy[c]	44	46.77	4.44	55	43.82	5.82	69	38.29	6.04	.000
SPI Overall Fluency[c]	44	17.14	3.69	55	13.85	4.52	69	11.16	5.67	.000
Female	45	0.33	0.48	56	0.50	0.50	71	0.32	0.47	.093
Black	45	0.04	0.21	56	0.11	0.31	70	0.10	0.30	.489
Hispanic	45	0.16	0.37	56	0.20	0.40	70	0.16	0.37	.811
SPED Status	45	0.27	0.45	56	0.16	0.37	71	0.45	0.50	.001
ELL Status	45	0.29	0.46	56	0.41	0.50	71	0.31	0.47	.361

[a]Pretest assessment was analyzed using normal curve equivalent scores that ranged from 1 to 99. [b]Assessment was analyzed using raw scores. [c]Assessment was analyzed using scaled scores. [d]Assessment was analyzed using Lexile scores.

Exhibit H2
Baseline Equivalence of Topic Completion Groups
on Outcome Measures and Demographic Characteristics

Baseline Characteristic	Completed All 160 Topics			Completed Between 100 and 159 Topics			Completed Fewer Than 100 Topics			p
	n	M	SD	n	M	SD	n	M	SD	
TOSREC[a]	92	33.51	15.82	37	30.61	14.45	43	21.70	14.56	.000
CTOPP Elision[b]	92	23.39	6.58	37	23.76	5.40	43	19.26	6.42	.001
Woodcock-Johnson III Word Identification[a]	92	44.83	14.84	35	46.43	12.32	42	33.88	16.20	.000
Woodcock-Johnson III Word Attack[a]	92	46.32	15.99	36	49.86	13.08	42	34.55	15.13	.000
TOWRE Sight Word Efficiency[b]	92	66.61	7.67	37	62.85	7.23	43	53.63	11.31	.000
TOWRE Phonetic Decoding Efficiency[b]	92	33.76	9.56	37	31.03	8.91	43	21.88	8.86	.000
CST[c]	79	319.43	29.85	27	330.78	32.38	35	296.17	44.67	.000
SRI[d]	92	444.14	158.82	37	456.16	127.88	43	278.33	184.55	.000
SPI Letter Name Accuracy[c]	91	97.22	9.71	37	96.35	10.05	40	93.90	15.56	.312
SPI Sight Word Accuracy[c]	91	22.65	3.34	37	21.30	3.87	40	18.90	3.48	.000
SPI Sight Word Fluency[c]	91	7.32	3.60	37	6.65	2.85	40	5.03	2.74	.001
SPI Nonsense Word Accuracy[c]	91	21.90	3.52	37	21.27	3.40	40	18.13	4.08	.000
SPI Nonsense Word Fluency[c]	91	7.75	3.31	37	7.49	3.76	40	4.78	2.85	.000
SPI Overall Accuracy[c]	91	44.55	5.58	37	42.57	6.31	40	37.03	6.12	.000
SPI Overall Fluency[c]	91	15.07	4.91	37	14.14	5.20	40	9.80	4.84	.000
Female	92	0.41	0.50	37	0.32	0.47	43	0.37	0.49	.638
Black	92	0.11	0.31	37	0.08	0.28	42	0.05	0.22	.509
Hispanic	92	0.14	0.35	37	0.19	0.40	42	0.21	0.42	.548
SPED Status	92	0.30	0.46	37	0.22	0.42	43	0.40	0.49	.225
ELL Status	92	0.33	0.47	37	0.41	0.50	43	0.30	0.46	.595

[a]Pretest assessment was analyzed using normal curve equivalent scores that ranged from 1 to 99. [b]Assessment was analyzed using raw scores. [c]Assessment was analyzed using scaled scores. [d]Assessment was analyzed using Lexile scores.

Exhibit H3
Baseline Equivalence of Initial Decoding Status Groups
on Outcome Measures and Demographic Characteristics

Baseline Characteristic	Pre Decoder			Beginning Decoder			Developing Decoder			p
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*p*
TOSREC[a]	6	35.85	14.72	44	19.50	13.27	118	33.74	15.14	.000
CTOPP Elision[b]	6	22.50	5.24	44	20.73	6.99	118	23.13	6.41	.119
Woodcock-Johnson III Word Identification[a]	6	39.83	12.17	42	34.05	18.90	117	45.90	12.37	.000
Woodcock-Johnson III Word Attack[a]	6	37.83	14.08	44	35.73	17.49	116	47.87	14.03	.000
TOWRE Sight Word Efficiency[b]	6	64.83	7.02	44	54.84	11.74	118	65.34	7.80	.000
TOWRE Phonetic Decoding Efficiency[b]	6	29.17	13.21	44	23.83	10.36	118	32.67	9.28	.000
CST[c]	6	298.33	41.88	28	294.14	41.19	104	323.41	31.21	.000
SRI[d]	6	405.00	211.87	44	308.75	188.34	118	440.46	155.43	.000
SPI Letter Name Accuracy[c]	6	48.67	16.18	44	98.16	6.01	118	97.94	6.49	.000
SPI Sight Word Accuracy[c]	6	18.83	3.82	44	19.75	3.62	118	22.23	3.62	.000
SPI Sight Word Fluency[c]	6	3.67	2.16	44	3.36	2.06	118	7.99	2.85	.000
SPI Nonsense Word Accuracy[c]	6	18.83	4.83	44	19.68	4.37	118	21.41	3.61	.019
SPI Nonsense Word Fluency[c]	6	4.50	2.26	44	3.41	2.06	118	8.44	2.94	.000
SPI Overall Accuracy[c]	6	37.67	8.04	44	39.43	6.68	118	43.64	6.08	.000
SPI Overall Fluency[c]	6	8.17	2.56	44	6.77	2.44	118	16.43	3.43	.000
Female	6	0.17	0.41	44	0.39	0.49	118	0.39	0.49	.550
Black	6	0.17	0.41	44	0.09	0.29	117	0.09	0.28	.797
Hispanic	6	0.17	0.41	44	0.18	0.39	117	0.16	0.37	.958
SPED Status	6	0.00	0.00	44	0.48	0.51	118	0.25	0.44	.006
ELL Status	6	0.17	0.41	44	0.32	0.47	118	0.36	0.48	.559

[a]Pretest assessment was analyzed using normal curve equivalent scores that ranged from 1 to 99. [b]Assessment was analyzed using raw scores. [c]Assessment was analyzed using scaled scores. [d]Assessment was analyzed using Lexile scores.

Appendix I
System 44 Software Usage Descriptives

Exhibit I1
***System 44* Software Usage Descriptives**

Subgroup	*n*	Total Sessions		Total Topics Completed		Total Hours on Software		Number of Topics Fast-Tracked		Median Session Time		Weeks in System 44		Number of Sessions Per Week	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Grade															
4	72	61.14	19.82	129.13	43.61	22.72	8.29	67.43	39.92	22.76	3.64	34.61	8.79	1.77	0.33
5	25	63.12	18.45	135.00	37.91	21.92	6.38	68.04	37.23	20.32	3.86	34.83	7.96	1.81	0.29
6	43	70.26	31.32	143.21	37.04	25.93	11.52	68.35	37.13	22.12	6.27	35.01	12.63	2.03	0.48
7	20	61.35	31.84	126.15	52.33	21.35	9.74	68.10	41.92	20.70	6.32	30.45	14.21	2.11	0.61
8	12	71.33	34.30	127.42	54.59	28.16	16.70	52.25	50.91	22.08	6.35	36.52	14.96	1.97	0.44
Decoding Status[a]															
Pre decoder	44	67.50	16.88	126.83	41.35	26.32	6.49	52.00	40.64	20.83	5.49	37.93	6.83	1.77	0.25
Beginning decoder	118	77.98	26.94	103.36	53.12	29.65	12.86	29.18	37.17	20.77	5.18	40.71	7.51	1.88	0.41
Developing decoder	6	58.94	23.62	146.19	30.53	21.29	7.91	82.93	28.66	22.52	4.85	31.73	11.06	1.91	0.45
FRL Status															
None	96	63.76	23.10	133.00	44.02	24.11	9.78	66.18	40.74	22.63	4.83	33.82	10.97	1.93	0.43
Reduced-Price	58	66.69	30.73	131.83	43.44	23.11	10.95	66.34	39.33	20.59	5.19	35.74	10.71	1.84	0.45
Free	18	60.83	20.85	137.11	39.79	22.73	7.81	71.28	36.54	22.83	4.73	33.08	11.52	1.91	0.39
ELL Status															
English only	114	61.96	23.84	131.86	42.97	23.30	9.97	66.03	39.60	22.39	4.85	33.72	11.01	1.87	0.42
Initial full English speaker	20	62.55	21.69	145.65	38.69	23.49	8.75	78.20	33.79	22.95	4.02	32.77	10.72	1.97	0.44
English learner	25	82.52	30.24	118.92	50.35	28.10	10.95	46.76	40.85	19.76	5.43	40.74	7.62	2.01	0.51
Redesignated former English learner	13	54.31	24.28	151.08	26.58	18.16	6.77	94.15	25.17	20.92	6.09	30.58	12.33	1.81	0.36

Exhibit continues

Subgroup	*n*	Total Sessions		Total Topics Completed		Total Hours on Software		Number of Topics Fast-Tracked		Median Session Time		Weeks in System 44		Number of Sessions Per Week	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
SPED Status															
None	119	59.90	22.54	137.62	38.24	22.16	8.01	73.87	37.72	22.51	4.43	32.85	10.09	1.85	0.41
Specific learning disability	12	86.24	24.66	131.24	41.08	32.61	13.06	43.88	36.37	19.94	5.24	42.13	8.88	2.04	0.36
Speech or language impairment	17	51.08	25.05	127.33	57.86	19.65	11.11	66.75	44.66	23.17	5.47	29.15	12.03	1.88	0.73
Other classification	24	78.21	28.49	114.42	55.67	26.55	12.05	47.75	38.66	20.04	6.59	39.16	12.08	2.01	0.38
Ethnicity															
Caucasian	107	62.84	23.16	133.01	43.37	23.75	9.70	66.79	39.70	22.86	4.86	33.65	10.89	1.89	0.38
African American	15	68.20	29.48	147.53	27.62	27.57	13.41	69.47	31.99	21.87	4.17	34.96	10.85	1.94	0.46
Hispanic	29	67.52	34.44	124.79	51.46	20.63	8.61	66.10	42.21	18.79	5.54	36.53	10.82	1.82	0.56
Asian/ Pacific Islander	9	69.56	21.04	121.00	46.43	26.44	8.43	50.11	49.68	21.00	4.24	36.49	11.63	1.96	0.29
Filipino	11	62.27	23.79	150.18	21.62	22.94	11.42	82.09	33.02	22.91	3.59	32.89	12.27	2.03	0.61
School															
Alta Murrieta	5	52.80	3.42	62.00	19.12	18.37	2.65	16.80	16.10	15.80	1.92	37.64	2.14	1.40	0.10
Avaxat	17	62.53	22.13	139.06	33.22	25.04	9.82	73.76	39.21	24.24	3.68	31.98	9.64	1.94	0.23
Buchanan	15	44.07	7.97	114.47	49.33	15.97	3.96	69.60	40.42	22.07	3.81	33.45	2.78	1.32	0.26
Curran	8	62.00	7.01	106.38	45.83	20.37	3.12	53.25	38.87	19.00	3.38	38.50	4.44	1.61	0.07
Monte Vista	24	64.08	20.49	141.29	31.90	24.35	8.08	71.42	41.46	22.96	4.09	34.64	10.46	1.86	0.21
Murrieta	13	69.54	19.19	138.46	47.26	24.29	7.14	67.00	34.89	21.15	2.82	36.48	9.53	1.90	0.24
Rail Ranch	15	70.27	20.42	149.27	26.67	24.27	7.85	77.53	33.88	23.13	1.06	34.36	9.65	2.04	0.18
Shivela	29	65.93	27.99	145.48	34.80	26.65	10.72	67.79	37.04	25.10	4.21	33.39	12.25	1.96	0.26
Thompson	24	67.29	33.94	112.62	58.19	18.51	5.71	58.58	45.75	16.33	5.95	34.92	12.49	1.92	0.47
McElhinney	6	75.00	32.77	121.33	43.50	32.71	15.56	47.17	45.27	24.33	5.47	35.83	13.11	2.04	0.23
Warm Springs	16	70.44	36.79	160.00	0.00	29.17	16.26	79.56	35.70	22.75	4.73	33.20	17.62	2.39	0.78

[a]Data missing for 4 students.